NOTE XIX.

ZOOLOGICAL RESEARCHES IN LIBERIA.

A LIST OF BIRDS,

collected by J. BÜTTIKOFER and C. F. SALA

in Western Liberia,

WITH BIOLOGICAL OBSERVATIONS.

BY

J. BÜTTIKOFER.

The readers of the »Notes" will remember that Prof. Schlegel, in 1881, published a paper [1]) about a zoological expedition sent under his supervision to Liberia, on the West Coast of Africa. That paper was, as Prof. Schlegel said, intended to serve as an introduction to the description of new and interesting animals, both those expected and such as were, at that time, already obtained from the expedition, and mentioned a number of valuable mammals and birds, collected during our nine months' stay on the banks of the St. Pauls River.

Since that time, the volumes of the »Notes" contain a number of papers [2]) from the hands of Drs. Jentink, Hu-

1) On the zoological researches in West Africa, Notes Leyd. Mus. 1881, p. 53.

2) *Dr. Jentink*, on a new African bat; on a new squirrel (Vol. III). —

brecht, de Man, Horst, de Marseul, Candèze, v. Lansberge and Heylaerts, in which important parts of our Liberian collections are treated of and several new species described, without exhaustive systematical lists having been given of our collections, sent in during our $2^1/_2$ years stay in Liberia.

This paper now is intended to open, under the general title of »Zoological researches in Liberia" a series of lists which subsequently will treat of the different groups of our collections, as well as those expected in from Mr. Stampfli, which gentleman has been busy for a year in carrying on our zoological explorations of that little known country.

Before entering upon my subject, I may be allowed to give, as an introduction to the following notes on Liberian zoology, some particulars about the country, especially that part which formed our field of explorations. To make my task more easy, I have adjoined a rough sketch of Western Liberia, showing our different hunting stations and the most important routes taken during our travels through that country (see Plate 6[a]).

Liberia, as far as this district is under legal domination of the Negro-Republic, lies between 4° 20′ and 7° N. L. and has, along the coast, an extent of about 300 miles. Towards the interior its frontiers are by no means defined, though they are exactly drown in the map of the

Monograph of the African Squirrels; Revision of the Manidae in the Leyd. Mus. (Vol. IV).

Dr. Hubrecht, on a collection of fishes from the St. Pauls River, with description of three new species (Vol. III).

Dr. de Man, carcinological studies in the Leyd. Mus. (Vol. III). — id., with description of a new species (Vol. V).

Dr. Horst, on two new species of *Acanthodrilus* from Liberia (Vol. VI).

S. de Marseul, a new Afr. species of the Coleopterous genus *Hister* (Vol. IV).

Dr. E. Candèze, a new Afr. species of the Coleopterous family Elateridae (Vol. IV).

J. W. v. Lansberge, description de trois espèces nouvelles d'*Onthophagus* (Vol. V).

F. J. M. Heylaerts, on the exotic Psychids in the Leyd. Mus. (Vol. VI).

Liberian Government. Its south-eastern frontier is formed by the San Pedro River, which separates it from the Ivory Coast while, in the North West, the Manna River separates it from the British Colony of Sierra Leone.

The tolerably straight coast-line consists chiefly of a sandy ridge without any pronounced formation of dunes. This ridge, sloping but slightly downwards on its inner side, is interrupted by numerous rivers and some high promontories, projecting in a more or less western direction into the sea and forming behind their northern slope a kind of bay, which offers a safe anchorage.

The most important promontories are: Grand Cape Mount, 1090′ above the level of the sea, Cape Messurado with Monrovia, the Capital of Liberia, 240′, and Cape Palmas, the most southern point of Liberia, of about the same height.

Immediately behind the above mentioned ridge begins the swamp region, stretching from three to ten miles into the interior and varied now and then by somewhat elevated grassy plains. The swamp region is intersected not only by the rivers, but by a whole net of creeks, enlarging now and then to more or less considerable pools. At flood-tide a great part of these swamps is covered with water, to which fact is to be attributed the existence of the vast Mangrove-forests which form here nearly the only vegetation.

Farther towards the interior the country rises gradually. The Mangrove-swamps are left behind and give place to a fertile soil, consisting of ferruginous clay, perfectly fit for agriculture, especially for coffee-farming. This region, which becomes more hilly towards the interior, is tolerably thickly populated by natives and Liberians (black settlers from America), which latter have founded their sugar- and coffee-farms by preference on the banks of the most important rivers as far up as they are navigable.

There is, however, a great part of this region still covered with forest and abandoned Negro plantations, as the

natives usually form new plantations in the forest, as they have exhausted the ground.

The mountainous region which succeeds the cultivated range is almost entirely covered with primeval forest and but thinly populated by the natives. Only now and then the traveller, on his wearysome marches through the almost endless virgin forest, reaches an open spot where he is reminded by some miserable looking cabin and the surrounding little farms, that this vast region, many days journey in breadth, is peopled by some isolated natives. Larger settlements and towns are very scarce in this region, and these latter are not seldom fortified with from 2 to 4 high wooden barricades and surrounded by large plantations, where rice and corn, cassavas and sweet potatoes are cultivated.

Behind this large mountainous forest-region begins the table-land or the so-called Mandingo Plains.

Here the forest ceases to predominate and wood becomes, higher up, so scarce that the Mandingo-tribes are obliged to burn cow- and horse-dung instead of it, and to use clay for building their houses and fortifications. Vast grassy plains are varied with rocky hills and well-cultivated fields where, certainly a strange sight to a Liberian, cows and horses, goats and straight-haired sheep are abundant, and where the Elephant, exterminated in the coast-region and very seldom seen in the forest-region, lives in whole herds together.

These vast Mandingo Plains, never visited yet in their upper parts by white travellers, are limited by the Kong Mountains which form the watershed between the Liberian rivers and the tributaries of the Niger.

Amongst the numerous large rivers I will only mention the Manna, Marfa, Grand Cape Mount, Little Cape Mount and the St. Pauls River, the latter the largest of all, and eastward from Monrovia the Junk- and St. Johns River, the River Cess (Cestos), the Sinoe- and the Cavallo River.

Most of these rivers have their origin on the Mandingo

Plains, while the sources of some of them, as is told by the Mandingoes, are to be sought for in the ravines of the Kong Mountains.

In a swift course, repeatedly interrupted and rendered innavigable by rapids and falls, they cross the thickly wooded mountainous region, where innumerable branches with excellent water and larger tributaries join the main river. After having reached the low lands, they flow calmly on to the sea, forming navigable ways for canoes and rowing boats which are, with the exception of the native carriers, the only means of transportation throughout the whole of Liberia.

The extent to which the rivers are fit for navigation is very different. While the last rapids of the St. Pauls River are not farther than 20 miles from the coast, some other rivers, as the St. John and the Cavallo R., are navigable for canoes for 50 miles and more towards the interior.

Like other countries of Western Africa, Liberia has its dry and its rainy season. The former is during our winter, the latter during our summer months. They are separated from each other by short transitional periods with storms and thunder-showers, the so-called tornadoes, occurring in this district about the time of the equinoxes. Notwithstanding there are no distinct limits to the different seasons, it is accepted by the Liberians as a rule that the dry season begins in the latter half of November or in the beginning of December and closes about the end of April. During the months of December, January and February there blows at night a cold dry landwind, the so-called harmattan, and no rain falls. The lower parts of the forests and plains, inundated during the wet season, become dry, the rivulets smaller, the rivers retreat within their banks and their water, during the rains thick and yellow, becomes as clear as cristal. The wet ground produces, on account of the high temperature, an immense quantity of vapor, which especially during the night is condensed by the cold harmattan in the form of mist and

dew in such abundance as to compensate sufficiently the want of rain. It is therefore not strange to meet, during the dry season, but little variation in the appearance of the flora and fauna of the country. The cotton-tree (*Eriodendron anfractuosum*) changes its foliage and stands about a fortnight entirely leafless, and on its newly developed buds feed, during the night, whole flocks of fruit-eating bats.

The grassy plains are frequently set fire to by the natives and a good deal especially of lower animal life is destroyed by the fire. The open sweet-water-swamps become smaller every day and their inhabitants, amongst which some species of fishes, especially of the genus *Ophiocephalus*, bury themselves in the mud at some depth to await, in a state of torpor, the delivering rains. As soon as these swamps are covered with a solid crust, they are visited by Negro-women who know tolerably well the places where fish may be found and make sometimes a good harvest.

Towards the end of February the sky becomes covered with clouds, and rolling thunder leads us every day to expect the long wished for tornado, though our hopes are again and again disappointed. At length, preceded by violent hurricanes, capable of rooting up trees of mammoth-like dimensions, the tornado bursts, the first rain falls. Later on the rains become more frequent till, towards the end of April, they are daily phenomena.

During the month of May the daily showers gradually pass over into the regular fall of the rainy season. Rainless days soon become scarce and the sun, though standing twice, during this season — in April and August — perpendicularly above the country, is hardly able to penetrate the cloudy sky.

Already in March the birds begin moulting, and moulting birds are still to be found in July. During this time they live more retired than ever, so that several species then are scarcely to be obtained. As the plumage of the birds is, during that time, generally imperfect, bird-collect-

ing is, though very interesting, but a thankless task.

The second half of July brings a welcome intermezzo of dry, sunny days, which have but too speedily passed away.

In August the rains set in with double strength and a whole week of continual rain is nothing unusual during this period. The small rivulets, clear as cristal in the dry season, are swollen to rivers, the forest-marshes to lakes, above which brushwood and high forest make a very dreary-looking appearance. The lower forest-regions get inundated by the swelling rivers, and the narrow foot-paths, connecting the Negro-habitations, are for a great deal impracticable.

Towards the end of September and still more in October is again the time of the tornadoes. The thickly clouded sky is cleared up by tremendous thunderstorms and heavy showers, which gradually diminish, during November, into some faint lightnings on the evening sky, and soon the setting in of the harmattan announces the beginning of the dry season.

This second tornado-time is the breeding season of most kinds of birds, which begin building their nests soon after their moulting period. Though breeding birds of the most different genera are found throughout the whole year, the months of October, November and December may be looked at as the general breeding season.

The ordinary temperature in Liberia may tolerably well be compared with that of a European summer, and becomes but seldom what we call insupportable. There is but little difference between the temperature of day and night, much less than on the Mandingo Plains or in the Sahara, where in day-time the ground is burnt by the sun and, during the night, shallow plashes get covered with a crust of ice. In the morning, short after sunrise, our thermometers indicated never less than 76° F., in the midday, between one and two o'clock, from 88 to 90°, and at six o'clock in the evening, just before sunset, 84°.

The highest temperature in the sun we ever stated, i. e. on an open plain, was 115°.

I need hardly to say that such a hot-house-temperature, together with the general climate and the abundance of water, is to produce an extremely rich flora and fauna. An exception from this rule is made by the coast-region whose flora and fauna is generally rather poor. Only the inner slope of the low strand-dune is covered with thorny shrubs and the long creepers of a fine *Convolvulus*. The seashore is visited, during the dry season, by three species of sea-tortoises (*Dermatochelys coriacea*, *Chelonia midas* and *Ch. imbricata*), which bury their globular, parchment-covered eggs in the dry sand at the back of the dune. Large flocks of Sternae and now and then a pair of *Rhynchops flavirostris* are seen flying above the surf, and but few shells of sea-mollusks, star-fishes and the like are left behind by the retiring tide. Some species of crabs (*Ocypode cursor* and *O. africana*) not differing in color from the yellowish gray sand, run quickly along the seashore, while another species, *Grapsus maculatus*, is found on rocks washed by the foaming surf, probably feeding upon different kinds of mollusks, as *Patella*, *Fissurella*, *Hipponyx* and *Littorina* with which these rocks are literally covered. The sandbanks before the mouths of the rivers and the banks of rivers and lagunes are, throughout the year, peopled with Alligators (*Crocodilus frontatus*) and Iguanos (*Monitor stellatus*), with flocks of Charadrine and Scolopacine birds, especially *Numenius phaeopus* and *Totanus canescens*, and wild Ducks (*Dendrocygna viduata*), with *Haliaetus angolensis* and, more distant from the water, with *Oedicnemus vermiculatus*.

The large swamp-region and the marshy banks of the rivers, as far as they are influenced by the tide, are covered with impenetrable Mangrove-forests which make, especially when seen from a distant, somewhat elevated point, an exceedingly sinister impression. These Mangrove-forests, where sweet and salt water is mixed together

and where the specific sea- as well as the sweetwaterfauna loose their conditions of existence and decompose as soon as life has left them, are the chief breeding places of the malaria which makes this coast one of the unhealthiest of the whole globe.

The huntsman who accidentally loses himself in such a labyrinth may be glad to find his way out again. He seldom extricates himself, in spite of all his care to climb through the aërial roots, without sinking now and then into a pool of mud, deceitfully covered with a thin blue crust. And after having being turned from his course, notwithstanding the useful compass, by bottomless pools, he is overpowered by a frightful agony, till these poison-breathing pest-marshes are left behind.

Who would, under such circumstances, expect in these pestiferous marshes a rich animal life? And this is nevertheless the case, though they may look very deserted at first sight. The hunter who in his small canoe penetrates the Mangrove slowly along one of those black, narrow creeks, will find the mud literally alive with myriads of larvae of Mosquitoes, Libellulae and other insects, and upon this mud are quickly moving to and fro, in every direction, crabs in a state of lively animation, especially *Sesarma* and *Thelphusa*, climbing along the aërial roots of the Mangrove. On more open places along the creeks we meet hundreds of beautifully colored Jumping Fishes (*Periophthalmus Koelreuteri* which will, at first sight, pass for a larval stage of some Amphibia on account of their manner of living. The aërial roots, hanging into the water along the creeks are, in some localities, covered with whole bunches of Mangrove-Oysters (*Ostrea arborea*).

On the branches of the Mangrove sit *Ceryle maxima*, *C. rudis* and *Halcyon malimbica*, and flocks of green Pigeons (*Treron calva*) are feeding upon the buds of the Mangrove. Farther back we meet with a colony of *Ardea atricapilla*, and the White-headed Stork (*Ciconia episcopus*) and the White Heron (*Ardea alba*) are wading in the shallow water. The higher Mangrove-trees, especially along

larger creeks and rivers, are the roosting-places of the Cormorant (*Graculus africanus*), and above all *Milvus aegyptius* and *Haliaetus angolensis* are wheeling in the air. And as for the larger animals, the Bush-Hog (*Sus penicillatus*) is rooting in the inner edge of the Mangrove-swamp, and at the waterside lies, imitating a dead knotty treetrunk, a Crocodile (*Crocodilus vulgaris*) in ambush for some Antelope or a Water-Deer (*Hyaemoschus aquaticus*) which may have the misfortune to visit its drinking place.

Directly behind the Mangrove we meet large grassy plains, varied with bosquets of oil-palms and brushwood. The high grass is, during the rains, visited by large flocks of Fringillidae, and *Macronyx croceus* sits on the all over scattered »wild peach-trees" (*Anona senegalensis*). The bosquets are peopled with Nectariniae, two species of *Eurystomus*, with Bee-eaters, *Dicrurus*, *Telephonus* and the splendid *Pholidauges leucogaster*. During the dry season the grass is commonly burnt by the natives, and the new grass is then visited by Antelopes, buffaloes and wild hogs, which latter are especially fond of the so-called wild peaches, the acrid but nice-smelling fruit of the above mentioned *Anona senegalensis*.

The plantations, especially the rice-fields, are the meeting-places of the most different groups of animal life, both of such as settle there and of others visiting them only as feeding-places. During the night they are visited by Buffaloes (*Bos brachyceros*) and Antelopes, especially the so-called »Red Deer" (*Tragelaphus scriptus*) and, though very seldom, by a family of Chimpanzees. Several species of Monkeys, above all of the genus *Cercopithecus*, come there in the early morning and late in the evening, while the more phlegmatic species of *Colobus* hardly will leave the lofty treetops of the primeval forest. Large fruit-eating Bats are fond of sweet bananas, soursops and Mango-plums, while the insectivorous kinds keep the vicinities of the Negro-habitations.

Ground-Hogs (*Aulacodus swinderianus*) and Ground-Squir-

rels (*Xerus erythopus*), the first living, like hares, in nests upon the ground, the latter in holes which they have dug in the ground, live on cassavas, potatoes and the sweet ground-nuts (*Arachis hypogaea*). The rice-farms are visited by large flocks of weavers and other genera of Passerine birds, which form a real plague to the owners of the farms, about the time when the harvest approaches. Birds of pray, much more seldom in the country than could be expected, are, excepting the common *Milvus aegyptius*, very thinly spread over the cultivated regions. Only occasionally a pair of the rare *Baza cuculoides* is met there, and at night-time we hear now and then the sad voice of *Syrnium nuchale*. Whole clouds of Bee-eaters (*Merops albicollis*) are swarming about, while another species (*M. erythropterus*) keeps close to the ground, picking up running beetles and other insects. *Eurystomus gularis* and *E. afer* are sitting lazily on isolated twigs on the edge of brushwood, while restless Nectariniae are swarming around flowering shrubs, where their artificial pendular nests are fixed to the ends of twigs.

Along the ground and through the lower branches of the brushwood runs the beautiful *Pitta angolensis*; the skirts of the neighbouring forest are peopled by different genera of singing birds, as *Turdus*, *Cossypha*, *Criniger*, *Andropadus*, *Pycnonotus* and *Cysticola*, while the more open places are inhabited by *Motacilla flava*, *Anthus gouldi*, and small flocks of *Vanellus inornatus*.

Reptiles are very numerous in this district, and poisonous snakes, as the dangerous *Vipera rhinoceros* and *V. nasicornis*, *Naja atropos* and *N. rhombeata*, as well as two species of *Agama* and several species of *Scincus* are not seldom met with, while amongst those which live under the surface of the ground, must be mentioned the genera *Typhlops*, *Ophioproctus* and *Caecilia*. Toads and frogs are also very numerous, especially tree-frogs, which are represented by a large number of beautiful and interesting species. The insect life is tolerably rich in the cultivated

region, though it gets much reduced by the myriads of the so-called drivers and two species of *Termes* (*T. mordax* and *T. bellicosus*).

Quite another aspect offers the great virgin forest that we enter after having left the cultivated district. A moist hot-house-air strikes us here, a smell of mouldering wood, of dead leaves and other decaying substances. There stands, in a mysterious twilight, before us a scene grander than we saw before, a wild chaos of giantic trees, smaller trunks and underwood, intertwined by a labyrinth of lianas and other creepers; half decayed trunks of mammoth-like dimensions, and above them others, prevented from falling down by neighbouring trees and the iron strength of a whole net of lianas; here a giantic tube of twisted lianas, which latter, fastened to the branches of surrounding trees, indicate the place where a tree, embraced to death, has decayed in an erect position. And above all there spreads a foliage so dense that the rays of the sun cannot penetrate to the ground. One of the greatest attractions of this primeval forest is the huge Silk-cotton-tree (*Eriodendron anfractuosum*), the trunk of which reaches a circumference of 30 to 40 feet and which spreads out his tremendous crown at a height of 80 to 100 feet. Below the foliage of this high forest par excellence, stands a forest of second rank, a forest in the forest, and in this latter is developed an impenetrable labyrinth of smaller trees and underwood, interwoven by innumerable creepers, which render free motion by man impossible. Only cutlass in hand is the huntsman able to force his way through these thickets and will find the way back easily enough by the cut-off twigs and marked trees.

The marshy places are covered with giantic Aroidea and Iridea of the most splendid white color and a fragrant smell. Beautiful white waterlilies and other aquatic plants delight the eye of the traveller, who has to cross, on long, half decayed bridges of sticks of the most original kind, the so-called monkey-bridges, these elegiacal forest-swamps.

Imagine now, that the crowns of trees are peopled with whole troops of monkeys, belonging to the genera *Colobus*, *Cercopithecus*, *Cercocebus* and *Nycticebus*, with numerous squirrels, with noisy hornbills, several species of birds of pray, pigeons and doves, plantain-eaters, parrots, woodpeckers and barbets, and whole flocks of the most different kinds of smaller birds; imagine the ground of these forests inhabited by buffaloes and antelopes, a family of Chimpanzees, an occasional old Elephant, a small Hippopotamus (*H. liberiensis*), a troop of wild hogs (*Sus penicillatus*), a Leopard or a Tiger-cat, lurking near a well for an antelope; by Viverras, porcupines, bush-rats (*Cricetomys gambensis*), beautifully spotted and striped mice of different kinds, three species of Manidae, by Guinea-fowls, Francolins and the curious *Agelastes meleagrides*, by poisonous snakes, and finally by myriads of wild bees, termites, ants, whirring cicadas and the like. Imagine these forests crossed by narrow foot-paths along which a caravan of singing and shouting carriers are removing the baggage of the white traveller to another place, and now and then an open spot with a little farm or a village with some dilapidated clay- and bamboo-huts; imagine these forests traversed by a large river full of rapids and rocky islands which, during the rains, disappear under the surface of a thick yellow stream — and on the bank, hidden by overshading trees at the foot of a roaring waterfall, a simple hut of palm-leaves, with one side entirely open. On the ground in the middle of this hut a little fire, along the three walls cases, boxes, guns and other hunting materials, nets, angling-rods, a large case used as a table and some smaller ones and an Elephant's skull as chairs; some hammocks hanging from the roof, where the inhabitants of the hut take, entirely dressed and armed, their short night's rest, and before the hut, at the waterside, a solid raft of roughly hewn tree-trunks, always ready to drift down the river in time of danger and then you have got a tolerably clear

idea of our hunting grounds, the scene of our nine months' stay at Bavia and Soforé Place, on the banks of the St. Pauls River.

It was on the 8th of January 1880 that my companion C. F. Sala and I landed at Monrovia, the Capital of Liberia, and were kindly received by the Dutch Consul, Mr. Wigman and his Assistant Veldkamp as well as by the Liberian Authorities, to whom we were recommanded by the Dutch Government. As the dry season was already much advanced, we prepared with the greatest speed for our first excursion to the interior, for which I selected the forest-regions along the St. Pauls River, notwithstanding the warnings of our new acquaintances who told us no good about the character of the native tribes, especially of the Golahs, who inhabit the banks of this river. After a nine days stay at Monrovia we left this place in a boat belonging to the Dutch factory, manned with about 10 Kroo-boys, and reached, by the Stockton Creek and the St. Pauls River, long after sunset the Station of Mr. Day, an American Missionary at Mühlenburg Mission near the first rapids.

As the river is, on account of its numerous rapids and falls, not navigable beyond Mr. Day's station, we engaged, with the aid of Mr. Day, a sufficient number of carriers and proceded to Bavia, a small Golah town on the right bank of the St. Paul, about four hours march from Mühlenburg, through primeval forest, which began shortly after we had left the mission.

Here we staid till the end of March. The whole river was, at that time, covered with rocky islands and banks, the abode of *Glareola megapoda*. A small canoe, which afterwards got lost in a waterfall, enabled us to visit these islands and the forests on the opposite bank. Except some farms, belonging to Bavia and the surrounding so-called half-towns, the whole country was covered with high forest.

After having explored this district, we removed to Soforé Place, a good days walk higher up the country. We had much trouble in getting a sufficient number of carriers, as the chief of Bavia was not willing to let us move so soon and we, therefore, were obliged to order carriers from Soforé Place, which I had visited some time before on a hunting excursion.

At Soforé Place, also on the right bank of the river, we staid from the 1st of April till the 15th of October. The country round this place was still more mountainous than at Bavia, and the river full of rapids and waterfalls. Large islands, densely covered with forest, divided the river into several arms.

This country still belongs to the Golah-tribe, while the left bank of the river is inhabited by the Pessy-people. Notwithstanding the rainy season had set in, we explored this country in every direction, and many long excursions were made, before we had to stop them on account of the advance of the rainy season and the hostilities of the natives. Hunting was very fatiguing in these forests, and many places really inaccessable on account of the numerous sweetwater-swamps. So we found, in the vicinity of Soforé Place, the tracks of an Elephant, which the natives told us was the only one in whole the neighbourhood. It had its head-quarters on one of the large islands of the river, which it crossed swimming and extended its ramblings sometimes very far on both sides of the river. Although there were some experienced Elephant-hunters at Soforé Place, this old specimen was too cunning for them and always succeeded in escaping their pursuit. Elephant-hunting is a very peculiar kind of sport amongst the natives. The Elephant-hunters, who make long trips through the country especially farther up where the immense forest-region is bordered by the Mandingo Plains, are armed with a long-barreled flint-gun and a bundle of longshafted iron spears, the shafts of which are adapted to the barrel of the gun instead of a ball. The Elephant, after having received one or

more of these missiles, rushes on through the forest, breaking off the shafts of the spears which latter, on account of their heads being broader in front than behind, stick fast in his body.

The Elephant soon after falls down from loss of blood and is easily found by the hunters, who follow him at their leisure, cut out his tusks with axes and smoke his flesh after having cut it into long strips.

The St. Pauls River and its tributaries, like all Liberian rivers, excel in delicious fish and a species of craw-fish (*Palaemon macrobrachion*). The fish-fauna is richly represented by different species of *Chromis* and *Hemichromis*, *Mormyrops*, *Notopterus*, *Eutropius*, *Alestes* and *Brachyalestes*, *Clarias* and, together with the latter, *Malapterurus electricus*, more abundant in slowly running muddy bush-creeks than in the main river. During the rains fishing is stopped entirely, as there seems to be no possibility of being repaid for the trouble. As soon, however, as the dry season has set in and the water runs off, the natives build weirs of lattice-work across the creeks, provided with large fish-baskets to catch the fish which come down with the falling water. Other fences, sometimes of great dimension, are built along the rivers in the shallow water near the banks. They have a trap-door at the waterside, by which the fish enter the trap, attracted by some bait which is in connection with a catch. As soon as the bait is touched by the fish, which enter sometimes in large shoals, the trap-door, weighted with a heavy stone, falls down and the fish are caught.

Another inhabitant of the rivers is an otter, about of the same size and color as our *Lutra vulgaris*, which, in spite of all our painstakings, never could be obtained, as it is almost impossible to approach noiselessly the banks of the rivers. A young live specimen, offered to me for sale, had badly mutilated tusks and so exorbitant a price was asked that I declined to purchase it. Another inhabitant of the rivers is the Lamentine (*Manatus sene-*

galensis), the Malentine of the Liberians, which, however, does not proceed farther up the rivers than the first rapids.

The rains prevailed with an unusual violence during our stay at Soforé Place, and during the months of August and September all connection with Mr. Day and the Coast was cut off. Certainly we had moved, in the dry days of July to another place higher up the river, which I had chosen as a new station on a trip to the inner edge of the forest region, a place, where every kind of food could be procured.

Sickly, however, the cunning headman of Soforé Place and brother of the powerful Golah-king Fân Quehqueh, did not like to let us depart, as we resembled in his hands an orange which he never got tired of squeesing out anew. In vain I tried to get carriers from the Boozies, a tribe amongst which we intended to take up our abode; they were too anxious to keep peace with the warlike Golahs to procure us the needful number of carriers.

The dry days of July were wasted in continual palavers and before we were aware of it, the rains had set in again with such a violence that we were obliged to stay.

About the 15th of October we were enabled to return by the intervention of Mr. Day who sent us carriers who, however, not being sufficient in number, were supplemented by people of Sickly. The carriers of the latter plundered our baggage on the way to Mr. Day's, without our being able to prevent it. Happily enough, our collections reached Monrovia safely and were directly packed and shipped for Europe.

From Monrovia we removed by sea, on board a cutter belonging to the Dutch factory, to Robertsport, a Liberian settlement at Grand Cape Mount, about 45 miles west from Monrovia, where we were kindly received by our old acquaintance Mr. Veldkamp and by the American Missionary the Rev. Mr. Grubb and his wife, as well as by Mr. Watson, the Superintendent for this place.

Grand Cape Mount is by far the most important promontory of the whole Liberian coast, and entirely covered with virgin forest. Its shadowy valleys are animated by beautiful noisy rivulets of the coolest and most excellent drinking water in Liberia. On its western slope, which projects pretty far out into the sea and thus forming a fine large bay, is situated the Liberian settlement of Robertsport, and on a terrace, far above this settlement, the American Missionary Station, with an unrivalled view over the open blue sea, the marshy estuaries of the Sugary, Marfa and Grand Cape Mount River, covered with Mangrove, oil- and wine-palms and crossed in all directions by numerous creeks, and eastward over the Fisherman Lake with the vast forest-region of the interior and a background of blue mountains in the distance.

The Fisherman Lake at the northern foot of the Mountain, as the promontory is called there, is the jewel of Grand Cape Mount Country. It is about 10 miles in length and from 3 to 4 miles in width, growing narrower at its lower western end, and forming the Grand Cape Mount River, which connects it with the bay of Robertsport. Its tributaries are numerous fresh-water-creeks, the most remarkable of which are the Morfi River and the Jonny Creek. During the wet season its blue, clear water is, on account of the immense supply of rain-water, perfectly sweet but gets salt towards the dry season and becomes then so shallow as to be hardly navigable except by small canoes.

The fauna of the lake depends much on the seasons, as during the rains only sweet-water-fishes are found, while in the dry season thornbacks, soles and other sea-fish are caught.

The Vey-people which inhabit this country, are very fond on fishing, which is performed in the most various ways. Women fish in the shallow water along the shore with small nets, while the men prefer to fish on moonless nights by the light of torches, made from palm-leaves, and armed either with the cutlass or with a long-shafted

spear, which is thrown violently and with extraordinary skill from out the canoe at their victims, as fish, crawfish, crabs, bullfrogs (*Rana occipitalis*) and toads (*Bufo pantherinus*) during their stay in the water. On the other hand the natives are not very fond of angling, except the Kroo-men, who are fisherman by predilection and supply the inhabitants of the coast-places almost daily with a larger or less amount of fresh sea-fish.

After a two days stay with Mr. Veldkamp at the Dutch factory I decided to make a stay during the dry season on the banks of the Fisherman Lake and selected upon the advice of the Rev. Mr. Grubb the Vey-town Bendo as our first station. As we bought, at the expense of four dollars, the friendship of Barlah, »the king of the lake", we were not ill-treated by the natives of this country, who were moreover much better-natured than their neighbours, the Golah tribe.

From Bendo we removed after a short stay to Buluma, likewise situated on the northern shore of the lake, from which place we explored the country in every direction. During this time I was fortunate enough to visit Cobolia, the residence of the Vey-King Marana, on the Marfa River.

The country round the lake offered a great variation of open water, creeks, sweet-water-swamps, large plantations, abandoned farms, vast grassy plains and hilly land, for a great deal still covered with primeval forest. Here we enriched our collections with a number of interesting animals amongst which the rare *Colobus polycomus*, the water-deer (*Hyaemoschus aquaticus*) and the sea-cow (*Manatus senegalensis*), the rare *Baza cuculoides*, *Numida cristata*, *Francolinus ahantensis*, *Vanellus inornatus*, *Lobivanellus albiceps*, *Ardea leucolopha* and *A. leuconotus*, *Ibis Hagedash* and *Plectropterus gambensis*. Amongst the reptiles was *Crocodilus vulgaris*, *C. frontatus* and a fine series of snakes, and amongst the fishes some interesting swamp-fishes, as *Clarias* and *Ophiocephalus*. We made in addi-

tion a nice collection of molluscs, crustacea and insects.

A great impediment was the sickness of my friend Sala, which at last obliged me, in order to procure him more comforts, to remove to Robertsport where we arrived on the 20th of April. There his health became worse every day until he died after long sufferings on the 10th of June 1881, the evening before he was to be brought by a Dutch vessel to Monrovia and eventually to Europe. He is buried in the grave-yard of the American Protestant Episcopal Mission at Robertsport.

After this sad event I kept my headquarters fixed at Robertsport. From here I made several long excursions and temporary stays in the interior. So I resided some time at Coro and Fali, two strongly fortified native (Vey) towns near the frontiers of the Golah Country, and at Caba and Sauwira on the Marfa River. After there was no possibility of staying any longer there on account of a violent native war, I removed to the southern slope of Grand Cape Mount. There I lived with my Liberian huntsman Jackson Demery and two servants in a tent in the midst of the virgin forest and called this place on account of our living quietly far from the noise of human habitations Travellers Rest.

But my health was broken, strength was gone and my legs were continually covered with ulcers so that, the last few months of my stay in Liberia, I was obliged to keep my bed. Seeing that there was no possibility of recovery in this climate, I left Liberia at the end of April 1882 for Europe, though only, as I thought then, for a few months. Here I found that I needed much more time to recover entirely and that I should probably never again become strong enough for that unhealthy climate. Moreover Prof. Schlegel died during my stay in Holland and I happened to awaken in Mr. Stampfli, an experienced Swiss huntsman and old acquaintance of mine, an interest in that district. He has now carried on for about a year, our zoological researches and is exploring at this moment,

from his head-quarters at Schieffelinsville, eastward from Monrovia, the valley of the Junk River and its tributaries.

It is not my intention to point out here the importance of Liberia as to the geographical distribution of animals, the following lists being sufficient to effect this task. I only wish to call attention to some of the most striking facts which show that there is a certain difference between the fauna of the lower coast-regions and that of Liberia, though I am unable to show the place where this line of demarkation is to be sought for. As I hope Mr. Stampfli or some other naturalist will proceed farther down the coast and also throw light upon the zoological condition of the Ivory-Coast. Certainly the fauna of the country explored by us has much more connection with that of Sierra Leone than with that of the Gold Coast. Instances of animals, not going farther down than Liberia and such found hitherto only in this latter country are *Colobus ursinus*, representing *C. vellerosus* of the Gold Coast, *Colobus polycomus* and *Cercopithecus callithrichus*, from the Senegal to Liberia, *Antilope* (*Cephalophus*) *doria* and *A. sylvicultrix* found with certainty hitherto only in Liberia and the interesting *Hippopotamus* (*Choeropsis*) *liberiensis*. Something similar is the case with a number of birds, though whole groups, for instance all the eight species of Liberian Hornbills, are also met with on the Gold Coast down to the Gaboon. *Psittacus timneh* is the Liberian representative of the common *P. erythacus* which does not occur beyond the western boundaries of the Gold Coast, and the same thing is the case with *Agapornis swinderniana*, which represents the common *A. pullaria*.

On the other hand, there are some birds, for instance *Halcyon badia* and *Columba unicincta*, which had hitherto been found both in Liberia and at the Gaboon, without having been met with in the intermediate regions. This peculiarity however need not lead to the conclusion that these birds will only inhabit the above mentioned coun-

tries and most likely future investigations may prove that they also inhabit the intermediate regions.

In the following lists will be mentioned only the specimens belonging to the collections of the Leyden Museum, the rest being sent to Mr. Schlüter, the well-known German dealer in objects of natural history at Halle, exclusively charged with the distribution of our duplicates. The same will be the case with the duplicates, expected in from Mr. Stampfli.

In my list of birds I have, with a few exceptions, followed the classification accepted by Dr. Hartlaub in his Ornithologie West Africa's. As I had interleaved and completed it, before my departure, with recent publications and annotations concerning the Ornithology of Western Africa, this most valuable book has rendered me exceedingly good services during and since my stay in Liberia.

I cannot close this introduction without mentioning Mr. Schweitzer, who was sent to Liberia by Dr. Dohrn at Stettin, especially for collecting molluscs and insects. He staid in Liberia from 1875 to 1877, and explored the country north-east from Monrovia, especially along the Messurado- and the Junk River. Besides an important number of partially new molluscs and insects, the latter published in the »Stettiner entomologische Zeitung" (1875 to 1878), he sent over mammals and birds. Amongst the mammals were very rare ones, as *Colobus polycomus*, *Antilope sylvicultrix* and *Hippopotamus liberiensis*, all three acquired by the zoolog. Museum at Berlin. As to the birds I do not know whether a complete list has been published somewhere or not. Two new species (*Laniarius melamprosopus* and *Turdirostris rufescens*) are described by Dr. Reichenow in the Journ. f. Ornith. 1878, p. 207. *Agapornis swinderniana* is, as Dr. Hartlaub writes in the Ibis, 1879, p. 84, rediscovered by Mr. Schweitzer in Liberia, who collected ten specimens of this long years in vain sought for species.

LIST OF BIRDS.

Syrnium nuchale.

Syrnium woodfordi (part.), Hartl. Orn. W. Afr. p. 21.

Syrnium nuchale, Sharpe, Ibis, 1870, p. 487. — id. Cat. Birds Br. Mus. II. 1875, p. 265.

Hab. West Coast of Africa, from the Senegal to Angola, where it represents *S. Woodfordii*, Smith, from the Cape.

One specimen (young male) from the vicinity of Monrovia, received in the beginning of April. Having bought the bird alive from second hand, I cannot give any communications about its habits.

Iris, bill and toes yellow.

It is very remarkable that, notwithstanding no pains were spared to get hold of the Liberian owls, we were not able to get a single one, except the above mentioned specimen, and therefore I must fully agree with other naturalists, that generally Owls are very scarce in the tropical parts of Western Africa.

Circus macrourus.

Circus macrourus, S. G. Gmel. N. Comm. Petrop. XV. p. 439, pls. 8 & 9. (1771), teste Sharpe, l. c.

Circus swainsonii, Smith, S. Afr. Q. Journ. I. p. 384 (1830). — Hartl. Orn. W. Afr. p. 16. — Schl. Mus. P.-B. Revue Accip. p. 49.

Circus macrurus, Sharpe, Cat. Birds Br. Mus. I. p. 67.

Hab. The whole of Africa, South of Europe and Asia.

Two full-grown young males, killed in November at Grand Cape Mount. The few specimens I have met with were all young birds. I have never seen this species far off from the coast and think it will hardly be found in the Interior. They are very fond of young chicken and visit every day at the same hour their regular feeding

places, sweeping along the ground in search of mice and small reptiles.

Iris yellow, cere and legs orange yellow.

Spizaetus bellicosus.

Falco bellicosus, Daud. Traité, II. p. 38 (1800).

Spizaetus bellicosus, Hartl. Orn. W. Afr. p. 5. — Schl. Mus. P.-B. Revue Accip. p. 59. — Sharpe, Cat. Birds Br. Mus. I. p. 265.

Hab. South and West Africa.

Only one young specimen of this beautiful Hawk-Eagle was obtained during my stay at Robertsport, which was told to me was brought alive from the Interior.

I have never seen this bird in wild state, and as I hardly can suppose that such a large bird might have slipped my attention, there is no doubt of its being very rare in the district we explored. My huntsman Jackson Demery told me he had shot the Hawk-Eagle several times in the Gallinas Country, West of the Manna River.

Iris, cere and feet yellow.

Astur monogrammicus.

Falco monogrammicus, Temm. Pl. Col. I. pl. 314.

Astur (Micronisus) monogrammicus, Hartl. Orn. W. Afr. p. 13.

Astur monogrammicus, Schl. Mus. P.-B. Revue Accip. p. 67.

Asturinula monogrammica, Sharpe, Cat. Birds Br. Mus. I. p. 275.

Hab. Western and Eastern Africa.

One adult female, killed at Buluma, Fisherman Lake.

A very shy bird, that seldom is met with in open country.

Iris brown; base of bill and cere orange red; feet red.

Nisus hartlaubii.

Nisus hartlaubii, J. Verr. in Hartl. Orn. W. Afr. p. 15.

Accipiter hartlaubii, Sharpe, Cat. Birds Br. Mus. I. p. 150, pl. 6, fig. 2.

Hab. Liberia, Gold Coast and Gaboon.

One female specimen from Soforé Place, St. Pauls River.

The only specimen we procured in Liberia agrees perfectly with the description given in Hartlaub, Orn. W. Afr. Zusätze p. 269, except cere and legs, which are red, like in *N. erythropus* Hartl. instead of orange, resp. yellow, as they ought to be according to the above mentioned description.

In its manners it is a true Sparrow Hawk.

Total length 25 cm., wing 16,5 cm., tail 12,8 cm., tarsus 4,5 cm., middle toe 2,8 cm. — Iris yellow.

A careful comparison of this bird with our type specimen of *N. erythropus* Hartl. (*N. minullus* Schl. Rev. Cat. Accip.) offers no striking difference except the color of the under surface, and, as soon as ornithologists will have a sufficient material at their disposal, both these species might have much chance to be united under the name of *N. erythropus* or perhaps, as did the late Prof. Schlegel in his Revue Cat. Accip. together with the third very closely allied species, *N. minullus* from Southern Africa.

Nisus macrocelides.

Astur macrocelides, Hartl. J. f. O. 1855. pp. 354 & 360; — id. Orn. W. Afr. p. 12.

Astur (*Micronisus*) *zonarius*, Hartl. Orn. W. Afr. p. 15.

Nisus unduliventer, Schl. (nec. Rüpp.), Mus. P.-B. Rev. Accip. p. 96.

Astur macroscelides, Sharpe, Cat. Birds Br. Mus. I. p. 100, pl. 3.

Hab. Liberia, Gold Coast, Gaboon.

Two young specimens were procured at Soforé Place (male) and at Buluma (female).

These birds are met with in small families of 3 to 5 specimens, keeping in dense but not very high forest. Their flight is very soft and remembers much that of an Owl.

Iris, cere and feet yellow.

Haliaetus angolensis.

Falco angolensis, Gmel. Syst. Nat. I. p. 252.

Haliaëtus angolensis, Schl. Mus. P.-B. Revue Accip. p. 119.

Gypohierax angolensis, Hartl. Orn. W. Afr. p. 1; — Sharpe, Cat. Birds Br. Mus. I. p. 312.

Hab. Tropical West and East Africa.

Adult and young specimens from Bavia (St. Pauls R.) and Grand Cape Mount.

Very common in the coast regions, as far as open country prevails. On the banks of the St. Pauls R. we have only met with it as far as Bavia, about 30 miles from the coast; at Soforé Place, 30 to 40 miles higher up, we have never seen it. In its habits this bird agrees more with the European *H. albicilla* than it does with the Vultures. Its airy is built, like that of *Milvus aegyptius*, on the highest cotton-trees in the vicinity of the water. This bird feeds generally upon fish, but seems to be very fond of palm-nuts (the fruits of *Elaeis guineensis*), as we have found those fruits more than once in the stomach of killed specimens. On account of this peculiarity its flesh is much desired by the natives, who tell it to be »very sweet".

Iris orange yellow; bill in old specimens white, in younger ones bluish gray, naked parts of the face orange yellow, feet dirty yellow.

Milvus aegyptius.

Falco aegyptius, Gmel. Syst. Nat. I. p. 261.

Milvus parasitus, Hartl. Orn. W. Afr. p. 10.

Milvus aegyptius, Schl. Mus. P.-B. (Milvi) p. 3 (1862); — Sharpe, Cat. Birds Br. Mus. I. p. 320.

Milvus migrans (part.), Schl. Mus. P.-B. Revue Accip. p. 126.

Hab. The whole of Africa and Madagascar, South of Europe.

Five specimens (old and young from different places).

The Yellow-Billed Kite is the commonest bird of prey in Liberia. We found it breeding on high, inaccessible cotton-trees (*Eriodendron anfractuosum*), very often in open country near the coast, more seldom in the vicinity of large rivers in the Interior. It is seen perching on trees along rivers and creeks, and visits, like *Haliaetus ancolensis*, the sea-shore. Its principal food are small mammals, reptiles, molluscs and fish. Beside the five already mentioned we have shot more than twenty specimens, but not a single one had the bill quite black, showing all more or less a yellowish horn-color, becoming a bright orange-yellow in adult specimens. I have little doubt that even quite young specimens, when alive, can be distinguished from the closely allied *M. migrans* by the more or less yellowish color of the bill.

Iris umber-brown; cere and feet orange-yellow.

Baza cuculoides.

Avicida cuculoides, Swains. B. W. Afr. I. p. 104, pl. 1. — Hartl. Orn. W. Afr. p. 10.

Baza cuculoides (part.), Schl. Mus. P.-B. Rev. Accip. p. 133. — Sharpe, Cat. Birds Br. Mus. I. p. 354, pl. 11, fig. 2.

Hab. From Liberia to the Congo.

One specimen (adult male) from Buluma (Fisherman Lake).

I believe this species to be very rare, as I had only once the chance of killing one, i. e. the male of a pair, inhabiting a deserted old farm. All I tried to get the female bird also, which came up as soon as the male was shot, would not help, and the next day it had left the place for ever. The stomach of my specimen was empty, but as far as I could observe the mentioned pair, they must feed almost exclusively upon locusts, which are abundant in that place.

Iris red, cere and feet orange.

Total length 37, wing 28,6, tail 19, tarsus 2,6, middle toe 3 cm.

Caprimulgus cinnamomeus.

Caprimulgus cinnamomeus, Sharpe, Ibis, 1871, p. 414.

Hab. Liberia and Gold Coast.

Two specimens, one a female, the other of undetermined sexe, both quite similar in color and size, were collected at Buluma, near the Fisherman Lake.

Like its congeners, the Red Goatsucker hides itself, during the day, in brushwood and is met with in the evening, short after sunset, on barren ground, like farms and footpaths, where it can be approached very nigh, flying off, when disturbed, and coming down directly to the same spot again.

Iris black, bill flesh-color, with black tip, feet flesh-color.

Scotornis longicaudus.

Caprimulgus longicaudus, Drap. Dict. class. VI. p. 169.

Scotornis climacurus, (Vieill.), Hartl. Orn. W. Afr. p. 23.

Hab. Western and Eastern Africa.

Collected near Grand Cape Mount.

All my Liberian specimens are much darker than those

from the Senegal, the Gold Coast and Eastern Africa in our Museum, the principal color being a dark brown instead of clay or *pallide fulvo-flavescens*, as is said in Dr. Hartlaub's diagnosis (Orn. W. Afr. p. 23). The Liberian specimens suit pretty well the description of *Scotornis nigricans* Salvad., given in Finsch & Hartl. Vög. O. Afr. p. 857, but as to the color of the tail, I cannot find the differences upon which the mentioned authors, besides the dark color, chiefly found the dark looking species.

Like other goatsuckers they are found in brushwood along the Fisherman Lake and near the sea-shore. Their voice resembles much the quacking of the West African bullfrog (*Rana occipitalis*).

Iris brown, bill black, feet flesh-color.

Waldenia nigrita.

Hirundo nigrita, Gray, Gen. of Birds, pl. 20.
Atticora nigrita, Hartl. Orn. W. Afr. p. 25.
Waldenia nigrita, Sharpe, Ibis, 1869, p. 461.
Hab. From Liberia to the Congo.

Five specimens, amongst which two quite adult, two in the plumage of passage and one young, all from the St. Pauls River.

The white throat-patch seems to be peculiar not to adult specimens only, but even to the youngest ones, as it exists, however mixed with a few fulvous feathers, in young specimens, collected at Bavia. Besides the white patch, the mentioned specimen is entirely grayish brown underneath. In the two not fully adult specimens, both males, the chest, sides of body and under tail coverts are already steal-blue, the abdomen chocolate-brown.

These fine Swallows are found along all the larger rivers I visited in Liberia. They can regularly be seen seated upon twigs and trunks of trees, rising to some height above the water, from where they hunt after flies and other insects, returning after a short flight to the

same spot where, in small excavities, their nests can be found.

Iris dark brown, bill and feet black.

Hirundo rustica.

Hirundo rustica, Linn. Hartl. Orn. W. Afr. p. 26.

This bird arrives in Liberia in great swarms in the beginning of the dry season, i. e. about half of November, when the Termites (*Termes bellicosus*) are swarming in the air. Famished as they are by the long journey, they make the most vivacious evolutions across the dark clouds of Termites, and the flapping of their bills can be heard even at some distance.

As I suppose these Swallows will not breed in their tropical winter-quarters, a nest with 3 half-fledged young ones, which I got on the 2nd of April 1882, short before my departure from Liberia, certainly will belong to the closely allied *H. lucida* (Verr. J. f. O. 1858, p. 42; Sharpe, P. Z S. 1870, p. 308). I found it on an old window-seat of the Dutch factory at Monrovia. It was built in the same way as the nests of our *H. rustica*.

Eurystomus afer.

Coracias afra, Lath. Ind. Orn. I. p. 172.

Eurystomus afer, Hartl. Orn. W. Afr. p. 28; — Schl. Mus. P.-B. Coraces, p. 142, — Sharpe, Ibis, 1871, p. 274.

Hab. West Africa, as far down as Angola; East Africa, as far as the Zambesi.

Three specimens from the St. Pauls River and the Fisherman Lake.

The adult male nearly entirely cinnamon, but shaded underneath and on the under wing-coverts with purple. Under tail-coverts, under surface of quills and tail-feathers, except the black tips, sea-green. Bill entirely orange-

yellow. The old female differs from the old male by its having more sea-green underneath, viz. this color extending over the whole abdomen and under wing-coverts, but sensibly shaded with purplish. Bill pale yellow, inclining to brown at the tip.

The young female is still more sea-green underneath, this color extending over the breast, where it becomes mixed with some brown feathers. Bill like in the old female.

This species is, like the following, met with in farms, sitting for hours quietly on an isolated twig in the hot sun, only now and then flying off after a wasp or bee and coming back to the same spot again.

Iris brown, in the younger specimen grayish brown, feet grayish brown.

Eurystomus gularis.

Eurystomus gularis, Vieill. N. Dict. Hist. Nat. XXIX. p. 246; — Hartl. Orn. W. Afr. p. 29; — Schl. Mus. P.-B. Coraces, p. 143; — Sharpe, Ibis, 1871, p. 278.

Hab. West Africa, from the Senegal to the Gaboon.

Three adult specimens from the St. Pauls River (Bavia and Soforé Place). All three similar in color, but the female specimen distinguished by a sea-green hue, covering the azure gular patch, which is peculiar to the adult male.

Iris brown, bill orange-yellow, feet grayish flesh-color.

Alcedo cyanostigma.

Alcedo cyanostigma, Rüpp. Neue Wirbelth., Vög. p. 70, pl. 24, fig. 2 (first plumage).

Alcedo cristata, Hartl. Orn. W. Afr. p. 36; — Schl. Mus. P.-B. Revue Alced. p. 6.

Corythornis cristata, Sharpe, Mon. Alced. p. 35, pl. 11.

Corythornis cyanostigma, Oustalet, Nouv. Arch. du Mus. 2e série, II. p. 72; — Boc. Orn. d'Angola, p. 96.

Hab. The whole of Africa.

Collected along the Marfa River. — In its habits it resembles our *Alcedo ispida*.

Iris dark brown, bill and feet coral-red.

Alcedo picta.

Todus pictus, Bodd. Tabl. des Pl. Enl. p. 49.
Alcedo picta, Gray, Gen. of Birds, I. p. 81, pl. 28.
Alcedo cyanotis, (Sw.) Hartl. Orn. W. Afr. p. 35.
Alcedo picta, Schl. Mus. P.-B. Rev. Alced. p. 8.
Ispidina picta, Sharpe, Mon. Alced. pl. 51.

Hab. West Africa, from the Senegal to Angola; N. E. Africa.

Collected along the St. Paul and near the Fisherman Lake.

This fine species is not exclusively found along the water, as we got it also in farms, where it seems to feed upon insects.

Iris black, bill and feet coral-red.

Ceryle maxima.

Alcedo maxima, Pall. Spic. Zool. fasc. IV, p. 14.
Ceryle maxima, Hartl. Orn. W. Afr. p. 37.
Alcedo maxima, Schl. Mus. P.-B. Rev. Alced. p. 1.
Ceryle maxima, Sharpe, Mon. Alced. pl. 20.

Hab. Whole of Africa.

Not rare round the Fisherman Lake and along the Marfa River, especially in the estuary of the latter, where the Mangrove-vegetation prevails. There it can be seen seated on an overhanging branch about 10 to 20 feet above the water, from where it plunges with a tremendous power into the water after some fish. The nests of this species were found in the banks of the Marfa River. They contained, at the end of December, two pure white eggs of the well-known shape of Kingfishers eggs, which measured 4,4 cm. in length and 3,5 cm. in width.

Iris dark brown, bill and feet black.

Ceryle rudis.

Alcedo rudis, Linn. Syst. Nat. I. p. 181.

Ceryle rudis, Hartl. Orn. W. Afr. p. 37; — Sharpe, Mon. Alced. pl. 19; — Boc. Orn. d'Angola, p. 97.

Alcedo rudis, Schl. Mus. P.-B., Revue Alced. p. 1.

Hab. The whole of Africa, South of Europe and of Asia.

Plentiful in the Cape Mount Country, especially near the mouth of the Marfa River. A large series of adult and young specimens collected.

This bird is frequently seen hovering for a minute or two in a height of about 30 feet, and plunges, after having espied a little fish or the like, with great rapidity into the water.

The nest-holes of this species are found in great number in the clay banks of the Marfa River, not far from its mouth. The eggs, commonly three to six in number, are not different in form and color from those of *C. maxima*, but much smaller, the axis being 2,9 cm., the diameter 2,3 cm. All the nestlings I collected had but one black band across the chest.

Iris dark brown, bill and feet black.

Halcyon senegalensis.

Alcedo senegalensis, Linn. Syst. Nat. I. p. 180.

Halcyon senegalensis, Hartl. Orn. W. Afr. p. 31; Sharpe, Mon. Alced. pl. 70.

Dacelo senegalensis (part.), Schl. Mus. P.-B., Revue Alced. p. 21.

Hab. Tropical and Southern Africa.

Several specimens collected on the banks of the St. Paul and in the Country of Grand Cape Mount.

Iris black, upper mandible coral-red, lower mandible black, feet brown, soles red.

Halcyon cyanoleuca.

Alcedo cyanoleuca, Vieill. N. Dict. Hist. Nat. p. 401, pl. 19.

Halcyon cyanoleuca, Hartl. Orn. W. Afr. p. 31; — Sharpe, Mon. Alced. pl. 69.

Dacelo senegalensis (part.), Schl. Mus. P.-B., Revue Alced. p. 21.

Halcyon senegalensis (part.), Shelley, Ibis, 1883, p. 557.

Hab. Senegambia, Liberia, Angola, Southern Africa.

One specimen (♀) collected at Bavia (St. Paul).

Notwithstanding Prof. Schlegel's and Capt. Shelley's uniting this species with *H. senegalensis*, I have the impression of its being a well-defined species. My Liberian specimen as well as two from the Senegal, being N°. 3 and 4 of Prof. Schlegel's Catalogue, fully agree with description and plate, given by Mr. Sharpe in his excellent Monograph, while there is no intermediate form neither in the collection of the Museum nor amongst my Liberian birds. My specimen was shot in brushwood near the St. Pauls River.

Iris black, upper mandible of bill scarlet, lower mandible black, feet brown, soles red.

Halcyon malimbica.

Alcedo malimbica, Shaw, Gen. Zool. VIII. p. 66.

Halcyon cinereifrons and *H. dryas*, Hartl. Orn. W. Afr. p. 32.

Halcyon dryas and *H. malimbica*, Sharpe, Mon. Alced. p. 193, pl. 71 and p. 196, pl. 72.

Dacelo cinereifrons, *D. malimbica* and *D. dryas*, Schl. Mus. P.-B., Revue Alced. p. 20.

Hab. West Africa, from the Senegal to Angola; S. E. Africa.

A series of adult males and females, a semi-adult female

and a young male (nestling) collected at Bavia, St. Pauls River, and at Buluma, near the Fisherman Lake.

My field determinations of this series having been *Dacelo malimbica* for the specimens from the St. Paul, and *D. cinereifrons* for those from the Fisherman Lake, I was quite estonished, when coming home, to find not the least difference between them. So I was obliged to compare them more carefully with the collections of the two species in our Museum, united by Dr. Hartlaub under the epithet of *H. cinereifrons*, by Mr. Sharpe and others after him under that of *H. malimbica*, but by Prof. Schlegel, in his »Revue de la collection des Alcedines" considered to be two different species.

Prof. Schlegel based his *Dacelo cinereifrons* upon its larger size, its generally paler blue color, especially that of the chest, which he calls »un beau vert aigue-marine" in *D. malimbica*, and, last not least, upon the habitat, as he writes: »Notez que cet oiseau (*cinereifrons*) n'a pas été observé à la Côte d'or." And the material, then at his disposition, entitled him to do so, as amongst his three specimens of *D. cinereifrons*, there is only that from Bissao, though quite similar in color, somewhat smaller than the two others from the Senegal.

My Liberian birds now seem to form a link between Prof. Schlegel's *D. cinereifrons* and *D. malimbica*, as they are perfectly according with *D. cinereifrons* in color, but with *D. malimbica* and the already mentioned specimen from Bissao, in size. Being sure that Prof. Schlegel, could he compare the material now at hand, would be the first to unite *D. cinereifrons* with *malimbica*, I cannot hesitate to unite both species, like Mr. Sharpe did in his splendid Monograph, under the name of *Halcyon malimbica*.

As much as I am convinced of the identity of the two mentioned forms, I yield to the opinion that *Halcyon dryas* (Hartl.) is, like *H. senegalensis*, a mere local variety of *H. malimbica*, restricted, since the Gold Coast specimens (Rio Boutry, Pel) have turned out to be the true *H. malimbica*,

to St. Thomas and Prince's Island and to the opposite mainland [1]).

Halcyon dryas is according very well with the variety *cinereifrons*, both in size and color, having the same tinge of the blue parts as our specimens from the Senegal. If there is any difference between them, it must be sought for in the color of the crown, which is decidedly more olivaceous in *H. dryas* than in *H. cinereifrons*, but, as will be shown directly, this color depends too much on the age, as that it would draw a sufficient limit between them.

Concerning the color of the crown in *H. malimbica*, attention must be called to the fact that in quite young specimens the crown of the head, except the front, is of a somewhat dull sea-green, passing with growing age through olivaceous into dirty gray, but always inclining more or less to olivaceous towards the nape. The crown of our Bissao bird cannot be distinguished from that of *H. dryas*.

The color of the under surface may also be considered a positive character for the age of these birds. In quite young specimens, the colors underneath are principally the same as in the adult, but more or less covered with an ochraceous buff, occupying even the cheeks and sides of the neck, the sea-green on the breast being much less intense than it is in the adult bird. In more advanced specimens the ochraceous color successively gives way to the color of the adult, beginning in the centre of abdomen and throat, and ending on the sides of the body. The beautiful sea-green seems to proceed successively, and only occasionally by moulting as is the case with a semi-adult Liberian specimen which shows some splendid new feathers amongst the dull greenish ones.

The bill in young birds is of a deep orange-red, with but little dark (cherry-brown) marks on the lower mandible.

1) A specimen from the Senegal, mentioned by Mr. Bouvier (Cat. Geogr. des Ois. recueillis par Marche et Compiègne, Paris 1875) as *H. dryas*, will undoubtedly be the Senegal variety of *H. malimbica*.

More advanced birds change the red of the lower mandible into black, keeping the red point only till they have got the dress of the quite adult stage. This fact can easily be followed through all three groups in question, as I have before me the mentioned nestling from Liberia, with a nearly entirely red bill, a semi-adult bird from Liberia, another from the Gold Coast, four from Prince's Island and the nearly adult bird from Bissao. In all them the lower mandible is more or less red, and all of them have the red point. One of our 6 birds from Prince's Island [1]) (*H. dryas*, Hartl.) has the lower mandible quite black, and so Capt. Shelley cannot be quite right when he says that *H. malimbica* may be most readily distinguished by the color of the bill (Ibis, 1883, p. 557).

The measures in the three conspecies are as follows (in cm.):

	wing	tail	tarsus	bill from front
Halcyon cinereifrons (Senegal, Bissao)	11,6—12,5	9—9,5	1,4—1,6	5,3—6,7
" dryas (Prince's Island)	11,8—12,6	7,8—8,4	1,6—1,8	5,2—5,9
" malimbica (Gold-Coast)	11,5—11,7	8—8,3	1,4—1,5	4,8—5,2
" " (Liberia) full grown	10,8—11,7	8—8,2	1,5—1,6	4,7—5

This species is found in brushwood especially along the water and, in the coast-region, on the Mangrove.

The stomach of my specimens collected in the forest, contained grasshoppers and Mantidae, those of the Mangrove birds small crabs.

Iris dark brown, feet coral-red.

Halcyon badia.

Halcyon badius, Verr. Rev. et Mag. de Zool. 1851. p. 264.

Halcyon badia, Hartl. Orn. W. Afr. p. 33; — Sharpe, Mon. Alced. pl. 58.

Dacelo badia, Schl. Mus. P.-B., Revue Alced. p. 19.

1) Collected by Dr. H. Dohrn.

Hab. Sierra Leone, Liberia, Gaboon, R. Ogobai.

Two male specimens from Soforé Place (St. Paul).

This very rare bird is but occasionally seen in brushwood, surrounded by high forest. There it sits for hours motionless on some twig not very high above the ground, pushing forth now and then a harsh cry. It is not shy at all and will hardly move even when within reach of gunshot. Never observed in the coast region. Food: beetles and other insects.

One of my specimens (fully adult) is entirely white underneath, while a younger male has the feathers on chest and flanks margined with a very narrow black line. Sides of body in both specimens black, under wing-coverts white, except those of the primaries, which form a black patch.

Iris dark brown, bill vermilion-red, feet brown.

Halcyon semicaerulea.

Alcedo semicaerulea, Forsk. Descr. Anim. p. 2.

Halcyon semicaerulea and *H. rufiventris*, Hartl. Orn. W. Afr. p. 33.

Halcyon semicaerulea and *H. erythrogastra*, Sharpe, Mon. Alced. pl. 64 and 63.

Dacelo semicaerulea, Schl. Mus. P.-B., Revue Alced. p. 19.

Hab. Canaries, St. Jago, West Coast of Africa from the Senegal to the Cunene River; Abyssinia.

Although far from being a vivaceous bird, the White-headed Kingfisher is not quite as sluggish as the foregoing species. It inhabits brushwood and adjacent farms.

Iris blackish brown, bill and feet coral-red.

Merops albicollis.

Merops albicollis, Vieill. N. Dict. H. N. XIV, p. 15; — Hartl. Orn. W. Afr. p. 39; — Schl. Mus. P.-B., Merops, p. 5; — Boc. Orn. d'Angola, p. 88.

Hab. Senegal to Gaboon.

Collected at Bavia (St. Paul) and Buluma (Fisherman Lake). — Very common wherever open country exists, in farms, grassy plains, when interrupted by groves, even near the villages of the natives. A very dull bird, when seated for hours lonely on an isolated shrub or small tree, from where it occasionally darts after an approaching insect, but very lively and noicy, especially short before sunset, when crowded together in large swarms and wheeling about in the air.

Iris red, bill black, feet greenish flesh-color.

Merops erythropterus.

Merops erythropterus, Gm. Syst. Nat. I, p. 464.

Merops erythropterus and *M. collaris*, Hartl. Orn. W. Afr. p. 40.

Merops erythropterus, Schl. Mus. P.-B., Merops, p. 10.

Hab. West Africa, from Senegambia to Damara Land; East Africa.

Collected near Buluma.

The Red-winged Bee-eater is by far not as common as the foregoing species, living rather in pairs or small couples of pairs than in large flocks together. It lives generally in farms, keeping tolerably close to the ground and picking up ants and other running (not flying) insects.

Iris red, bill black, feet dark brown.

Merops gularis.

Merops gularis, Shaw, Nat. Miscell. pl. 337; — Hartl. Orn. W. Afr. p. 42; — Schl. Mus. P.-B., Merops, p. 12.

Hab. W. Africa, from Sierra Leone to Angola.

A series collected at Monrovia, near the Fisherman Lake and along the Marfa River.

This beautiful Bee-eater is found in pairs or small flocks wherever open country exists, but was never met with in the Interior, that is about more than 10 to 15 miles from

the coast. It has a very nice quavering song but is much more quiet and makes not the evolutions of its congener *M. albicollis*. When singing, it sits tolerably erect on a dry isolated twig, about 20′ above the ground, almost exposed to the hot sun, and let, while warbling, hang down its splendid red throat-feathers. Along the Marfa River I found them hunting in flocks of 6 to 10 specimens after flies and mosquitos, plunging now and then, in pursuit of their pray, into the water.

Iris red, bill black, feet dark brown.

Cinnyris verticalis.

Certhia verticalis, Lath. Ind. Orn. I. p. 198.

Nectarinea cyanocephala (♂) and *verticalis* (♀), Hartl. Orn. W. Afr. pp. 49 and 50.

Cinnyris verticalis, Shelley, Mon. Nect. p. 301, pl. 97; — Gadow, Cat. Birds Br. Mus. IX. p. 80.

Nectarinia cyanocephala, Boc. Orn. d'Ang. p. 171.

Hab. West Africa, from Senegambia to the Quanza.

Collected at Robertsport and Monrovia (Grave-yard).

This species is found in farms and brushwood.

Iris dark brown, bill and feet black.

Cinnyris fuliginosa.

Certhia fuliginosa, Shaw, Gen. Zool. VIII, p. 222.

Nectarinea fuliginosa, Hartl. Orn. W. Afr. p. 43; — Boc. Orn. d'Angola, p. 163.

Nectarinea aurea, Hartl. Orn. W. Afr. p. 44.

Cinnyris fuliginosus, Shelley, Mon. Nect. p. 275, pl. 86; — Gadow, Cat. Birds Br. Mus. IX. p. 95.

Hab. West Africa, from the Senegal to the Congo.

Two specimens (male and female) collected near Monrovia and Robertsport.

This species seems to be not common in Liberia, as I was not able to get a larger series of specimens. Like its

congeners it hovers about flowering shrubs in search for insects.

Iris brown, bill and feet black.

Cinnyris chloropygia.

Nectarinia chloropygia, Jard. Ann. and Mag. Nat. Hist. X. p. 188; — Hartl. Orn. W. Afr. p. 47; — Boc. Orn. d'Ang. p. 170.

Cinnyris chloropygius, Shelley, Mon. Nect. p. 257, pl. 79; — Gadow, Cat. Birds Br. Mus. IX. p. 34.

Hab. West Africa, from Senegambia to Angola.

A small series with nests and eggs, collected at Grand Cape Mount.

The commonest of all Sun-birds known to me from Liberia.

Iris dark brown, bill and feet black.

Its nest hangs at the end of a twig about 3' above the ground, generally in old farms, where grass and brush-wood are growing up again. It is of a pouch-like, somewhat oval shape, filted together with the soft fibres of plantain-leaves and cotton, with which latter material it is very thickly lined, and outside decorated with interwoven pieces of *Lichen*, which gives it a gray and white speckled appearance. The entrance, a round hole in the side near the top, is covered by a kind of jetty, built from the same material as the nest. Each nest contains commonly two, very seldom three eggs of an oval form. Axis 1,5, diameter 1,1 cm.; color grayish white with concentred dirty streaks at the thicker pole. Collected the 14th November.

Cinnyris venusta.

Certhia venusta, Shaw, Nat. Misc. X, pl. 369.

Nectarinea venusta, Hartl. Orn. W. Afr. p. 48.

Cinnyris venustus and *C. affinis*, Shelley, Mon. Nect. p. 235, pl. 74, and p. 239.

Nectarinia venusta, Boc. Orn. d'Angola, p. 173.

Cinnyris venustus, Gadow, Cat. Birds Br. Mus, IX. p. 40.

Hab. West Africa, from Senegal to Congo; North East Africa.

Collected near Robertsport, along the Marfa River, and near Monrovia.

All our male specimens have the non-metallic parts of the under surface pale sulphureous, the pectoral tufts chrome-yellow.

The female birds are pale earthy brown above, and ashy white underneath; the centre of breast and abdomen with a tinge of yellow. Front, eyebrow, a streak below the eye, chin and throat, edge of wing, under wing-coverts and tips of tail-feathers white; quills, with the exception of the first and second, edged with olive. Bill shorter but less curved than in the males, and remembering much that of the genus *Anthreptes*, wing longer than in the male.

Iris of the male dark brown, of the female brownish red; bill black, feet sooty brown. Wing of the male 5,1 cm., of the female 5,5 cm.

The nests of this species are found along rivers, fixed to the end of overhanging boughs. They are not different in size and structure from those of *C. chloropygia*, but have a grayer appearance. The eggs, generally two in number, are ashy gray, slightly washed with violet, and irregularly varied with dark lines and spots. Axis 1,6 cm., diameter 1,2 cm. Collected the 20th of December.

Anthreptes hypodilus.

Nectarinia hypodilus, Jard. Contr. Orn. 1851, p. 153.

Nectarinea hypodelos and *N. subcollaris*, Hartl. Orn. W. Afr. p. 52.

Nectarinia hypodelos, Boc. Orn. d'Angola, p. 176.

Anthreptes hypodila, Shelley, Mon. Nect., p. 345, pl. 111.

Anthothreptes collaris (part.), Gadow, Cat. Birds Brit. Mus. IX, p. 116.

Hab. West Africa, from Senegambia to Angola.

Collected at Buluma, Fisherman Lake.

An adult female has the feathers of the throat edged with shining golden green.

Iris dark brown, bill and feet black.

Prinia mystacea.

Prinia mystacea, Rüpp. N. Wirbelth. Vög. 110; — Sharpe, Cat. Birds Br. Mus. VII. p. 191.

Drymoeca superciliosa, *melanorhyncha* and *mystacea*, Hartl. Orn. W. Afr. pp. 55, 56 and 57.

Hab. The whole of Africa, below the Sahara (Sharpe).

An adult female with nest and eggs, collected near Robertsport, Oct. 26th. This specimen is according very well with the description of Swainson, much better than with that of Rüppell (*Drymoeca mystacea*).

Iris reddish brown, bill black, feet pale flesh-color.

The globular nest, upon which I caught the bird, was built in the top of a low shrub, in a swamp, about 2' above the water. It was very neatly woven from narrow strips of grass leaves and sewed to some green leaves, the edges of which had been perforated for that purpose. A large leaf was sewed to the top of the nest and covered it like a roof, forming a kind of portico above the aperture, which is on the side of the nest, near the top. The nest had no lining at all. It contained four beautiful eggs of a pale green color and very irregularly spotted with brown, especially round the thicker pole. Axis 1,55 cm., width 1,05 cm. Another nest of the same species I found in a Coffee-tree at Robertsport, fastened on the same way between two large Coffee-leaves.

Cisticola lateralis.

Drymoeca lateralis, Fras. P. Z. S. 1843, p. 16; — Hartl. Orn. W. Afr. p. 55.

Cisticola lateralis, Sharpe, Cat. Birds Br. Mus. VII. p. 251.

Hab. West Africa, from Liberia to the Congo.

Three specimens from Soforé Place.

All three specimens were shot in high, isolated trees, standing in farms. They have a soft, melodious song.

Iris reddish yellow, bill black, feet flesh-color.

Cisticola rufa.

Drymoeca rufa, Fras. P. Z. S. 1843, p. 17; id. Zool. Typ. pl. 42; — Hartl. Orn. W. Afr. p. 58.

Cisticola rufa, Sharpe, Cat. Birds Br. Mus. VII. p. 252.

Hab. West Africa, from Liberia to the Congo.

Two specimens (male and female) from Grand Cape Mount.

The male, killed in October, has a very worn plumage, its color generally more inclining to gray than the female. This latter was shot in May, and its freshly moulted plumage is more fulvous. Darker shaft-stripes on the upper surface can be seen in both specimens, and also under a certain light narrow cross bars on the tail-feathers. Wing of the male 4,7 cm., of the female 4,2 cm.

Iris reddish brown, upper mandible horn-color, lower mandible and feet flesh-color.

Acrocephalus turdoides.

Calamoherpe turdoides (Meyer), Hartl. Orn. W. Afr. pag. 61.

Acrocephalus turdoides, Seebohm, Cat. Birds Br. Mus. V. p. 95.

Observed in Robertsport, Grand Cape Mount.

It was in the morning of the 26th of November, when I heard the first time the well-known song of this bird, and from that time I could hear and see it every morning and sometimes all day long in a kind of long reed that grows there on dry, stony ground. It was the only specimen I ever heard in Liberia, and I was so much amused

with its song and the attachment it proved to have to my station, that I was not able to kill it. A few days before new-year, just after I had decided to get hold on it, I found that it had left the place.

Camaroptera brevicaudata.

Sylvia brevicaudata, Cretzschm. in Rüpp. Atlas, Vög. p. 53, pl. 35.

Camaroptera brevicaudata (part.), Hartl. Orn. W. Afr. p. 62; — Boc. Orn. d'Ang. p. 280; — Sharpe, Cat. Birds Br. Mus. VII. p. 168.

Hab. The tropical part of Eastern and Western Africa.

An adult male collected near Monrovia.

Iris pale brown, bill black, feet flesh-color.

Motacilla vidua.

Motacilla vidua, Sundev. Oefv. Vetensk. Akad. Förhandl. 1850, p. 128; — Finsch and Hartl., Vög. Ost-Afr. p. 263; — Boc. Orn. d'Angola, p. 291.

Hab. Africa below the Sahara, Egypt; Palestine (Tristram).

Collected at Bavia, on rocky Islands in the St. Pauls River.

Plentiful on the sand-banks and bare rocks which, on account of the dry season, grow larger every day, till they become covered again by the rising water in the rainy season.

Two young specimens in my possession show the same coloration as the adult ones, only is the dark color, the collar round the fore-neck included, grayish brown instead of black. Not the least difference can be found between my Liberian specimens and five other ones of the same species from the Cape, contained in the Leyden Museum.

Iris, bill and feet black.

Motacilla flava.

Motacilla flava, Linn. S. N. p. 331.
Budytes Rayi (Bonap.), Hartl. Orn. W. Afr. p. 72.
Motacilla flava, Finsch und Hartl. Vög. Ost-Afr. p. 268.
Collected at Grand Cape Mount.
Not rare in farms, even close to the villages of the Negroes.
Iris brown, bill and feet black.

Anthus pyrrhonotus.

Anthus pyrrhonotus, Vieill. N. Dict. d'Hist. Nat. I. p. 361; — Sharpe et Bouvier, Bull. S. Z. France. II. p. 477.
Anthus Gouldii, Fras. P. Z. S. 1843, p. 27; — Hartl. Orn. W. Afr. p. 73.
Hab. Africa, South of the Sahara.
Collected at Buluma, near the Fisherman Lake.
A male bird, contained in my collection is according very well with the description in Hartlaub. A female, shot on the same spot a few days later, is darker brown underneath and has very strongly pronounced dark moustachial stripes. Exactly similar in size and color is a male specimen in the Leyden Museum, collected by v. Heuglin at Bongo and sent in under the name of *Anthus mystacalis*.
These birds are generally found in pairs together, in farms and grassy plains short after the grass is burnt off. Wing in male 9,5, in female 9 cm.
Iris dark brown, upper mandible blackish horn-color, lower one yellowish flesh-color, feet flesh-color.

Macronyx croceus.

Alauda crocea, Vieill. N. Dict. d'Hist. Nat. I. p. 365.
Macronyx croceus, Hartl. Orn. W. Afr. p. 73; — Boc. Orn. d'Angola, p. 297.

Hab. The whole of tropical Africa.

Collected in the grassy plains along the Grand Cape Mount- and Marfa River.

This bird is very common in the plains along the Grand Cape Mount River after this latter has left the Fisherman Lake. These plains seem to be one of those limited places where the bird is living in great number. Another such place is the plain on the right bank of the Marfa River near its mouth. On other plains, farther in the Interior, and on those between the Fisherman Lake and the Little Cape Mount River, offering quite the same conditions, I never saw it. This peculiar bird calls the attention by sitting on the top of *Anona senegalensis*, a small tree which is very characteristic for the plains, and singing its short and not unmelodious notes. Now and then it flies off and hovers for a moment at some height above the ground, before it comes down and hides itself, like our sky-lark, in the grass.

Iris brown, bill bluish gray, feet flesh-color.

Pitta angolensis.

Pitta angolensis, Vieill. N. Dict. d'Hist. Nat. IV. p. 356; — Hartl. Orn. W. Afr. p. 74; — Boc. Orn. d'Ang. p. 240; — Elliot, Monogr. Pittidae, pl. 4.

Hab. West Africa, from Sierra Leone to Angola.

Four specimens, collected at Bavia (St. Paul) and Grand Cape Mount.

This beautiful bird is but occasionally met with and seems to be very rare although it is spread over the whole country and can be found close to the coast as well as in the hilly region of the Interior. It inhabits brush-wood, where it keeps to the ground, only now and then jumping upon a twig, which occasionally stops its way. I had but once the chance to observe it for a while when laying in a thicket to wait for wild hogs, but heard no sound of it. The other three specimens were caught in snares.

Iris dark brown, bill horn-brown, base, nostrils and ridge orange, feet flesh-color.

Turdus pelios.

Turdus pelios, Bonap. Consp. 1. p. 273; — Hartl. Orn. W. Afr. p. 75.

Turdus pelios and *T. chiguancoides*, Seebohm, Cat. Birds Br. Mus. V. p. 230 and 231.

Turdus icterorhynchus (Pr. Würt.), Boc. Orn. d'Ang. p. 265.

Hab. West Africa, from Senegal to Congo; East Africa, Niam-Niam Country (Bohndorff).

An adult female collected at Grand Cape Mount.

Perfectly similar in color with our type of *T. pelios*, except the flanks, which are »pale grayish brown" (*T. chiguancoides*), showing but a slight shade of »pale buffish chestnut", which latter color characterizes *T. pelios*. Wing 11,2 cm., tail 8,6 cm.

Iris brown, bill yellow, feet grayish flesh-color.

As my Liberian specimen would belong, after Mr. Seebohm, to *T. pelios* on account of its smaller size, but come very near to *T. chiguancoides* on account of its grayish brown flanks, it might be better to reunite *T. chiguancoides* with *T. pelios*, the more as our type of the latter is fully as large as Mr. Seebohm's *T. chiguancoides*, the length of the wing being 12 cm.

Cossypha poensis.

Cossypha poensis, Strikl. P. Z. S. 1844, p. 100; — Hartl. Orn. W. Afr. p. 77; — Sharpe, Cat. Birds Br. Mus. VII. p. 35.

Hab. West Africa, from Liberia to Gaboon.

Collected near Soforé Place, St. Pauls River.

Met with now and then in narrow bush-paths and thickets.

Iris dark brown, bill black, feet pale yellow.

Cossypha verticalis.

Cossypha verticalis, Hartl. Beitr. Orn. W. Afr. (1848) p. 23; id. Orn. W. Afr. p. 77; — Sharpe, Cat. Birds Br. Mus. VII. p. 45.

Hab. West Africa, from Senegambia to the river Niger; East Africa.

A male specimen, caught in a snare, in brushwood along a swamp.

Iris brown, bill black, feet grayish brown.

Alethe poliocephala.

Trichophorus poliocephalus (Temm.), Hartl. Orn. W. Afr. p. 85.

Alethe castanonota, Sharpe, Cat. Afr. Birds, p. 20; id. Cat. Birds Br. Mus. VII. p. 59, pl. 2.

Hab. West Africa, from Sierra Leone to the Gold Coast.

One specimen (adult male) from Soforé Place, St. Paul's River.

Met with in thickets and surrounding open places, keeping always close to the ground.

Iris brown, bill black, feet pale flesh-color.

There can be no doubt that Mr. Sharpe's *Alethe castanonota* is identical with Temminck's *Criniger poliocephalus* in the Leyden Museum, first mentioned by Bonaparte (Consp. I. p. 262) and more amply described, as an aberrant form of *Trichophorus*, by Dr. Hartlaub (Orn. W. Afr. p. 85). A thorough comparison with Mr. Sharpe's description and plate shows not the least difference with our four types from the Gold Coast and Fernando Po, the black chin, mentioned by Mr. Sharpe in his original diagnosis, being only overlooked in the short descriptions of Bonaparte and Dr. Hartlaub.

Crateropus atripennis.

Crateropus atripennis, Swains. Birds W. Afr. I. p. 278; — Sharpe, Cat. Birds Br. Mus. VII. p. 483.

Crateropus atripennis (part.) Hartl. Orn. W. Afr. p. 79.

Hab. West Africa, from Senegambia to Cape Palmas.

Collected in brushwood on the Cape Messurado.

Iris dark brown, bill horn-yellow, feet lead-color.

Turdinus gularis.

Turdinus gularis, Sharpe, Ibis 1870, p. 474; id. Cat. Birds Br. Mus. VII. p. 543, pl. 14.

Hab. West Africa, from Liberia to the Congo.

Collected on the Grave-yard at Monrovia.

Iris brown, bill and feet gray.

Criniger barbatus.

Trichophorus barbatus, Temm. Pl. Col. III. pl. 82; — Hartl. Orn. W. Afr. p. 82.

Criniger barbatus, Sharpe, Cat. Birds Br. Mus. VI. p. 82.

Hab. Liberia and Gold Coast.

Collected at Soforé Place (St. Paul's River).

Met with in high forest and brushwood along the St. Paul's.

Iris vermilion, bill and feet lead-color.

Criniger canicapillus.

Trichophorus canicapillus, Hartl. Beitr. Orn. W. Afr. p. 24; id. Orn. W. Afr. p. 84.

Xenocichla canicapilla, Sharpe, Cat. Birds Br. Mus. VI. p. 105.

Hab. West Africa, from Senegambia to the Gold Coast.

Collected at Soforé Place (St. Paul's) and Buluma (Fisherman Lake).

This bird is a very good singer and lives preferably in the underwood of the high forest along the water.

Iris brown, bill and feet lead-color.

Criniger leucopleurus.

Phyllastrephus leucopleurus, Cass. Pr. Philad. Acad. 1855, p. 328; — Hartl. Orn. W. Afr. p. 89.

Trichophorus nivosus, Hartl. J. f. O. 1855, p. 356; id. Orn. W. Afr. p. 84.

Xenocichla leucopleura, Sharpe, Cat. Birds Br. Mus. VI. p. 104.

Hab. West Africa, from Senegambia to the Congo.

Collected near Soforé Place (St. Paul's) and at Buluma (Fisherman Lake).

Found, like the former, in thickets and the undergrowth of high forest. It has a rich melodious song and contributes much to the interruption of the silence in the forest region.

Iris dark brown, bill brown, feet lead-color.

Criniger eximius.

Trichophorus eximius, Hartl. J. f. O. 1856, p. 356; id. Orn. W. Afr. p. 85.

Criniger eximius, Sharpe, Cat. Birds Br. Mus. VI. p. 88.

Hab. Liberia and the Gold Coast.

Collected near Soforé Place (St. Paul's).

This species inhabits, like its congeners, the high forest and occasionally visits the thickets of abandoned plantations.

Iris red, bill grayish horn-color, feet reddish brown.

Xenocichla syndactyla.

Dasycephala syndactyla, Swains. Birds W. Afr. I. p. 261.

Xenocichla syndactyla, Hartl. Orn. W. Afr. p. 86; — Sharpe, Cat. Birds Br. Mus. VI. p. 101.

Hab. West Africa, from Senegambia to Gaboon.

Collected near Soforé Place (St. Paul's).

Like the representants of the genus *Criniger*, this bird is a very good singer and lives preferably in the underwood of the virgin forest.

Iris red, bill bluish horn-color, feet lead-color.

Andropadus latirostris.

Andropadus latirostris, Strickl. P. Z. S. 1844, p. 100; — Hartl. Orn. W. Afr. p. 87; — Sharpe, Cat. Birds Br. Mus. VI. p 107.

Hab. Forest region of West Africa; from Senegambia to Gaboon.

Collected near Soforé Place (St. Paul's).

The only specimen we collected is a full-grown (young?) male with yellow moustachial streaks and the inside of the bill, the gape, the edges of the bill and the nostrils yellow.

Iris brown, feet ochraceous flesh-color.

Andropadus gracilirostris.

Andropadus gracilirostris, Strickl. P. Z. S. 1844, p. 101; — Hartl. Orn. W. Afr. p. 87.

Chlorocichla gracilirostris, Sharpe, Cat. Birds Br. Mus. VI. p. 114.

Hab. West Africa, from Gambia to Loango.

Male and female from Buluma, near the Fisherman Lake. Generally found, like its congener *A. latirostris*, in thickets, which it seems to prefer above the high forest. It has a nice soft song.

Iris red, bill black, feet lead-color, with somewhat darker toes.

Pycnonotus barbatus.

Turdus barbatus, Desf. Mém. Acad. Roy. de Sciences p. 500, pl. 13.

Ixos ashanteus et *I. inornatus*, Hartl. Orn. W. Afr. p. 88.

Pycnonotus barbatus, Sharpe, Cat. Birds Br. Mus. VI. p. 146.

Hab. West Africa, from the Gambia to the Congo.

Collected, with nests and eggs, at Buluma and Robertsport.

The commonest bird in whole Liberia, especially in the Coast region, where it lives in open country, in the gardens of towns and villages and in coffee-plantations. Although it is not at all sparing its voice, I cannot agree with some authors who class it amongst the best vocalists of Western Africa. Its song is a loud, not unmelodious »chee, chee'-cheeguah and is generally the first sound which calls the attention of the naturalist after he has set foot on shore.

Iris reddish brown, bill and feet black.

The nest is a nice cup of about three inches wide, very neatly and thoroughly built from small roots and interwoven leaves, but without any lining, and is fixed in the fork of a branch, preferably of plum-trees (*Mangifera indica*). The eggs, generally two in number, are pale rose-color, densely stipped with brown and violet spots. Axis 2,2 cm., diameter 1,6 cm.

Terpsiphone nigriceps.

Tschitrea nigriceps, Hartl. J. f. O. 1855, pp. 355, 361; id. Orn. W. Afr. p. 91.

Terpsiphone nigriceps, Sharpe, P. Z. S. 1874, p. 306; id. Cat. Birds Br. Mus. IV. p. 359.

Hab. West Africa, from Senegambia to the Gold Coast.

Collected at Buluma (Fisherman Lake).

This bird is found in company with different other species which sometimes swerve in whole flocks through the high forest in search of insects.

Iris black, wattles round the eye, bill and feet cobalt-blue.

Bias musicus.

Platyrhynchus musicus, Vieill. N. Dict. d'Hist. Nat. XXVII. p. 15.

Bias musicus, Hartl. Orn. W. Afr. p. 92; — F. & Hartl. Vög. O. Afr. p. 313, pl. 3, fig. 2 & 3; — Sharpe, Cat. Birds Br. Mus. IV. p. 142.

Hab. West Africa, from Liberia to Angola; Zambesi.

Collected near Robertsport (Grand Cape Mount).

Tolerably common in brushwood along and on the grassy plains, in plantations and gardens, even in the Negro habitations. It feeds upon caterpillars and flying insects.

Iris golden yellow, bill black, feet pale yellow.

Artomyias ussheri.

Artomyias ussheri, Sharpe, Ibis 1871, p. 416; id. Cat. Birds Br. Mus. IV. p. 144, Pl. 3, fig. 2.

Hab. Liberia and Gold Coast.

An adult male, collected at Soforé Place.

I shot this rare bird in brushwood along the banks of the St. Paul's, where it seemed to live on insects.

Iris dark brown, bill black, feet sooty brown.

Platystira cyanea.

Muscicapa cyanea, S. Müller, Syst. Nat. Suppl. p. 170.

Platystira melanoptera, Hartl. Orn. W. Afr. p. 93; — Boc. Orn. d'Ang. p. 195.

Platystira cyanea, Sharpe, Cat. Birds Br. Mus. IV. p. 145.

Hab. West Africa, from Senegambia to the Congo.

Collected near Robertsport.

This species is not rare in brushwood along swamps and rivers. It feeds upon caterpillars which it picks off from twigs.

Iris brown, wattle above the eye scarlet, bill and feet black.

Muscicapa grisola.

Muscicapa grisola, Linn. Syst. Nat. I. p. 328; — Hartl. Orn. W. Afr. p. 97.

Hab. It is a winter visitant in whole Africa.

One specimen, collected at Buluma (Fisherman Lake).

This specimen, with a very worn, pale plumage, was shot in a glade near the Fisherman Lake, the 3rd of January.

Dicrurus atripennis.

Dicrurus atripennis, Swains. Birds W. Afr. I. p. 256; — Hartl. Orn. W. Afr. p. 101; — Sharpe, Cat. Birds Br. Mus. III. p. 232.

Hab. West Africa, from Sierra Leone to the Gold Coast.

Collected near Monrovia.

This species seems to be rarer than its congener *D. modestus*, as we had only once the chance to obtain it. It was shot in young forest behind Monrovia.

Iris reddish brown, bill and feet black.

Dicrurus modestus.

Dicrurus modestus, Hartl. Rev. et Mag. de Zool. 1849, p. 495; id. Orn. W. Afr. p. 101; — Sharpe, Cat. Birds Br. Mus. III. p. 232.

Dicrurus coracinus, Verr. Rev. et Mag. de Zool. 1851, p. 311; — Boc. Orn. d'Ang. p. 548.

Dicrurus atripennis, Rchw. (nec Swains.), J. f. O. 1875, p. 26.

Hab. West Africa, from Liberia to Angola.

Collected at Buluma and near Caba on the banks of the Marfa River. Agreeing perfectly well with the large series of *D. modestus* resp. *coracinus* in the Leyden Museum, which Mr. Sharpe is very right in uniting under the name of *D. modestus*.

This species is found in clearings and plains, interrupted by boscage.

Iris red, bill and feet black.

Melaenornis edolioides.

Melasoma edolioides, Swains. Birds W. Afr. I. p. 257, pl. 29.

Melaenornis edolioides, Hartl. Orn. W. Afr. p. 102; — Sharpe, Cat. Birds Br. Mus. III. p. 315.

Hab. Western and North-eastern Africa.

A male and nest with eggs collected near Robertsport, Grand Cape Mount.

This bird must be rare in the districts visited by us, as I had only once the chance of observing it, when I found its nest in a swamp, directly behind the beach, near Robertsport. This nest, very much like a dove's nest in size and shape, is built from thorns and twigs, and lined very sparingly with little roots, just sufficient to prevent the eggs from dropping through it. It was built in the fork of a shrub tolerably far off from the centre, and about three feet above an almost inaccessible swamp. The eggs, two in number, are greenish gray, very closely covered with irregular, softened spots of ochraceous brown and tolerably obtuse at the narrower pole. Length of them 2,5, width 1,8 cm. I have shot male and female near the nest, on the 29th of October, but the mud not permitting my boy to reach the spot in time, the female escaped and only the male, a very fine specimen, was secured.

Iris dark brown, bill bluish black, feet very deep blue.

Fraseria cinerascens.

Fraseria vinerascens (Temm.), Hartl. Orn. W. Afr. p. 102; — Sharpe, Cat. Birds Br. Mus. III. p. 304; — Boc. Orn. d'Ang. p. 213.

Hab. West Africa, from Liberia to the Congo.

One specimen from Soforé Place, St. Pauls River.

In its habits and voice this bird is very much like *Platystira cyanea*. Like this latter species it climbs from twig to twig, hunting after insects and caterpillars. We have only found it along the banks of rivers in overhanging brushwood.

Iris brown, bill black, feet lead-color.

Telophonus senegalus.

Lanius senegalus, Linn. S. N. I. p. 137 (1766).

Lanius erythropterus, Shaw, Gen. Zool. VII. p. 301.

Telephonus senegalus & erythropterus, Hartl. Orn. W. Afr. p. 105 & 106.

Telephonus erythropterus, F. & Hartl. Vög. Ost Afr. p. 336; — Boc. Orn. d'Angola, p. 223.

Telophonus senegalus, Gadow, Cat. Birds Br. Mus. VIII. p. 124.

Hab. West and East of tropical Africa.

Collected on the Island of Gambia, in the estuary of the Grand Cape Mount River.

This bird is a regular inhabitant of the small bosquets and the so-called wild peach-trees (*Anona senegalensis*) with which the grassy plains are interspersed. In its habits it resembles much our Red-backed Shrike.

Iris and bill black, feet lead-color.

Nicator chloris.

Tchagra chloris, Less. Traité d'Orn. p. 373.

Laniarius peli (Bonap.), Hartl. Orn. W. Afr. p. 109.

Nicator chloris, F. & Hartl. Vög. O. Afr. p. 360; — Gadow, Cat. Birds Br. Mus. VIII. p. 166.

Hab. West Africa, from Senegambia to the Congo.

Collected at Bavia and in the Mountain of Grand Cape Mount.

This species is an inhabitant of high forest. We found it tolerably common along the St. Paul's, but rarer in the district of Grand Cape Mount.

Iris brown, bill black, feet and claws lead-color.

Dryoscopus gambensis.

Lanius gambensis, Licht. Verz. Doubl. p. 48.

Dryoscopus gambensis (Bp.), Hartl. Orn. W. Afr. p. 110; — Gadow, Cat. Birds Br. Mus. VIII. p. 146.

Hab. Tropical West- and East Africa.

Collected in brushwood near Monrovia.

Iris brick-red, bill black, feet dark lead-color.

Corvus scapulatus.

Corvus scapulatus, Daud. Traité d'Orn. p. 233; — Schl. Mus. P.-B. Coraces; p. 3; — F. & Hartl. Vög. O. Afr. p. 374; — Sharpe, Cat. Birds Br. Mus. III. p. 22; — Boc. Orn. d'Ang. p. 300.

Corvus curvirostris (Gould), Hartl. Orn. W. Afr. p. 114.

Hab. The whole of Africa below the Sahara; Madagascar.

Collected at Buluma, near the Fisherman Lake.

Very common in the estuaries of the rivers, along the sea-shore, in short wherever animal food is to be found in considerable quantities. This species lives, more exclusively than any other of its congeners, upon fish, crawfish and molluscs, which are sometimes left behind in great quantities by the retiring tide, and is, moreover, very fond of palm-nuts. During the palm-oil-season, from February to May, as the country-people say, its meat must be »much sweet", and I was obliged to shoot lots of them for our boy's dinners. Now and then I tasted this »meat" myself, and although I did not find it exceedingly palatable — especially that of adult birds — I much preferred it to that of Hornbills, Plantain-eaters, Parrots and the like, which is very tough and dry indeed. The nest of the African Rook is built in the crowns of high, inaccessible cotton-trees.

Iris chocolate-brown, bill and feet black.

Oriolus brachyrhynchus.

Oriolus brachyrhynchus, Swains. Birds W. Afr. II. p. 35; — Hartl. Orn. W. Afr. p. 81; — Sharpe, Cat. Birds Br. Mus. III. p. 218.

Oriolus baruffii, Bonap. Consp. I. p. 347; — Schl. Mus. P.-B. Coraces, p. 109.

Hab. West Africa, from Sierra Leone to Gaboon.

Three specimens (males) collected near Soforé Place, St. Paul's River. Also observed in the district of Grand Cape Mount.

All these specimens being different from each other in size and in the color of the four middle tail-feathers, I cannot but agree with Mr. Sharpe, who considers *O. baruffii* Bonap. (Schl. Cat. Coraces) to be identical with *O. brachyrhynchus*. The principal reason of Prof. Schlegel for the separation of *O. baruffii* was its smaller size. The mesurements of the wing in my three birds now show that one of them is larger, the other as large and the third smaller than our largest *O. baruffii*. One of them has the outer pair of the four olive-green median tail-feathers very largely, the other only a little and the last not at all marked with black, notwithstanding they are killed at about the same time, the first being shot in August, the second in September, and the third in October. Their song is very much like that of *O. galbula*, interrupted now and then by a kind of mewing, like that of a cat.

Iris red, bill cherry-brown, feet lead-color.

Pholidauges leucogaster.

Turdus leucogaster, Gm. Syst. Nat. p. 819.

Pholidauges leucogaster, Cab. Mus. Hein. I. p. 198; — Hartl. Orn. W. Afr. p. 120; — F. & Hartl. Vög. O. Afr. p. 376.

Hab. West Africa, from the Senegal to the Gaboon; North Eastern Africa.

A large series collected along the Fisherman Lake.

This species exclusively inhabits the open country, especially grassy plains, interrupted with small trees and thickets. There it is found sitting in small families together, exposed to the hot sun which seems not to cause it any annoyance.

The adult males sit solitary at some distance from the group. Adult females are not different from the young specimens of the year.

Iris sulphur-yellow, bill black, feet dark gray.

Hyphantornis aurantia.

Malimbus aurantius, Vieill. Ois. chant. pl. 44 (1805).

Hyphantornis aurantius, Hartl. Orn. W. Afr. p. 121. — F. & Hartl. Vög. O. Afr. p. 868.

A series of specimens collected near Robertsport, Grand Cape Mount.

My adult specimens agree very well with the descriptions given by Finsch and Hartlaub. One of them labelled as a female, does not differ at all from the adult males. As the young stage of plumage of this bird is not yet described, it may be of some use to give a description of two young males, shot out of the same colony as the adult ones. One of them, probably the younger, shot the 25th of October, is uniform olive-green above, with darker centres to the feathers; edges of the secondaries and wing-coverts olive-yellow, but not as bright and broad as in adult specimens. Chin, throat, a superciliar stripe, edge of wing and under wing-coverts yellow, chest, abdomen, vent, sides of body and under tail-coverts pale gray, whitish on the centre of breast and abdomen and on the under tail-coverts. The young male, shot the 7th of November, is just changing into the plumage of the adult stage. The gray parts underneath are changing into yellow, forehead, chin and throat have strong marks of rich orange-color, the whole crown, and also the rump, changing from olive-green into yellow. Hind neck, back and wings not different from the younger specimen.

The iris of the adult male is yellowish brown, of the female and young birds red. Bill in adult specimens and in the more advanced of the described young birds black, in the other young bird flesh-color, feet of all specimens flesh-color. Food: grass seeds.

This bird is found in colonies of from 12 to 30 nests in thickets along the sea-shore, on the small islands lying before the mouth of rivers, and on the river-banks. The nests are not, like those of other weavers, built close together, but rather spread over a tolerably large territory, hanging from boughs of shrubs between 4 to 8 feet above the ground or, on the river-side, above the water. The nest has some resemblance in form to a kidney and is about 13 cm. long and 9 cm. high, with aperture and cup underneath. It is very strongly woven and firmly fastened to the bough. The eggs, generally three in number, are 2 cm. long and from 1,4 to 1,5 cm. wide; ground-color pale green, covered with irregular violet and brown spots, which are much concentred on the larger pole.

A large series of nests and eggs collected in November.

Hyphantornis brachyptera.

Ploceus brachypterus, Swains. Birds W. Afr. I. p. 168, pl. 10.

Hyphantornis brachypterus, Hartl. Orn. W. Afr. p. 121.

Hyphantornis ocularius (part.), F. & Hartl. Vög. O. Afr. p. 397.

Hab. West Africa, from Senegambia to the Congo.

Collected near Robertsport.

As far as the material in the Leyden Museum allows a conclusion, *H. brachyptera* may always easily be distinguished from the closely allied *H. ocularia* (Smith) by its somewhat smaller size and more especially by its shorter and somewhat stouter bill. In the Leyden Museum are 3 specimens of *H. ocularia* from the Senegal and two others from Natal perfectly similar in every respect, while *H. brachyptera* is represented by a series of 11 specimens from Senegambia, the Casamanze, Liberia and from the Gold Coast. As the usual measurement of the culmen of the bill is rather uncertain, I have it, in this special case, replaced by that of the distance between the nostril and the point

of the bill, which distance is 1,2 cm. in *H. brachyptera* and 1,5 cm. in *H. ocularia*.

This species lives not gregarious like most of the weavers do, and is but sparingly found in brushwood and neighbouring rice-farms.

Iris yellowish white, bill black, feet flesh-color.

The nests of this species have, like those of *H. ocularia*, the shape of a large retort, hanging, with the open end downward, from boughs in thickets about 8′ above the ground. They are very skilfully woven from long, elastic fibres and certainly the texture is one of the most solid and the most artificial of all weavers nests I ever examined. One of three collected nests contained 2 eggs. They are dirty white and all over, especially on their thicker pole, sprinkled with reddish brown. Length 2,1 cm., width 1,4 cm.; found 14th of November.

Hyphantornis textor.

Oriolus textor et *Loxia melanocephala*, Gm. Syst. Nat. pp. 390 & 859.

Hyphantornis textor, Hartl. Orn. W. Afr. p. 124.

Hab. West Africa, from Senegambia to the Gaboon.

Collected with nests and eggs at Robertsport.

Iris orange, bill of adult blackish horn-color, of young pale horn-color; feet flesh-color.

This species is, with *H. castaneofusca*, the commonest weaver in Liberia, and like the latter lives in large colonies together, in the crowns of huge Cotton-trees and isolated Oil- and Cocoa-palms, even among the Negro habitations. There can be seen sometimes more than a hundred nests in the same tree, all belonging to one colony. In the village of Robertsport I saw this species, together with *H. castaneofusca*, united in one colony, not only breeding in the same tree, but their nests mixed with each other. As they had taken possession of a tolerably low tree, I could easily observe them with the aid of my spyglass. They

kept up a continual and deafening chatter the whole day long when building their nests, which was fully one day's work. As soon as one had brought along some suitable material and disappeared to get some more, another, apparently more lazy, came on to tear away what the first had built, and use it for his own purpose. A tremendous alarm and furious fight was always the result of such burglary, and palaver was not settled before some feathers were lost and some blood was shed. Not seldom we found colonies of *H. textor* far from human habitations, even in forests. It is very peculiar that these birds like to settle in trees, where *Haliaetus angolensis* has built its airy, so that, in the Cape Mount Country, really hardly such an airy is found without being surrounded by a colony of those noisy weavers. Whether the first likes to have such an animated society and builds its airy amongst the colony, or the weavers do the same for security, I do not know, but as the huge airy lasts much longer than the pouches of the weavers, I think the latter reason more probable. At the harvest-time these birds, like most of their congeners are a plague to the rice-fields which they visit in enormous clouds. On account of that, all the weavers together are called »rice-birds" by the Liberian settlers, and the latter as well as the native rice-farmers are compelled to keep watch and drive the birds away.

Nest and eggs of this species can hardly be distinguished from those of *H. castaneofusca*. The former is of a globular form, almost like a snail-shell, with the hole underneath, and fastened to the end of a twig so that a tree with such a colony of weavers looks as if it was overloaded with large fruits. The materials, used for that purpose, are generally the leaves of a very strong kind of reed or, in its absence, the leaves of palmtrees. A small bite is first made in the lower part of the leaf and the bird then seizing in its bill the fiber next the bitten place flies off holding it firmly in its beak and thus tearing off a long strip of the leaf which it takes to its

nest. They begin always by tying together the forks of a twig as to make the aperture, after which they build on just in the same way as a stocking is knitted. The nest is very neatly lined with leaves and the cup with some soft, dry grass. Each nest contains two, more seldom three pale green eggs, sparingly stipped with brown. Length of the eggs 2,3 cm., width 1,6 cm. Collected in October.

Hyphantornis castaneofusca.

Ploceus castaneofuscus, Less. Rev. Zool. 1840, p. 99.
Hyphantornis castaneofuscus, Hartl. Orn. W. Afr. p. 126.
Hab. West Africa, from the Casamanze to the Gaboon.
Collected at Bavia (St. Paul's) and at Robertsport.
Iris yellow, bill black, feet flesh-color.

As this species is identical with the foregoing in its habits, much more cannot be said about that matter. It is just as common as *H. textor*, keeps close to human habitations and was never found in the forest. Colonies of this bird apparently prefer lower positions for breeding and are not seldom met in the vast reed-jungles where the nests are very strongly tied to the tops of one or two canes. They seem to be very particular in the selection of a new breeding-place, as the following observation will show.

In December 1881 my attention was called one evening to an unusual noise in a not very high tree close to my hunting station at Robertsport. There was a great number of *H. castaneofusca*, flying off and coming back again and examining very minutely the whole tree, and all that with a tremendous noise. They were »talking palaver", as my boys told me on asking for the reason. Early in the morning of the next day, a whole cloud of the same birds came on and took, with a deafening noise, possession of the tree, where they immediately began building their hanging nests. As one of those reed-fields was close

by, they proceeded very fast in their work which kept them in a state of estonishing activity the whole day long. I spent much time that day in observing their proceedings, which I could do very easy, my spyglass in hand, from my window. At sunset the nests, 54 in number, were finished, as far as I could observe from my position, and the birds flew off altogether for their nights-lodging. The next morning soon after they had come back, I heard a terrible noise again. The birds examined tree and nests from all sides — something must apparently have happened — and, as upon a given sign, off they flew and rushed down into the cane-grove right behind my station, where they began immediately to build other nests which they fastened to the tops of the canes, about 8 to 10′ above the ground. A few days afterwards they had laid their eggs, 2 to 3 in number, uniform bluish green and of the same size as those of *H. textor*. I never saw one of the birds return to the above mentioned tree again, and I guess that they had been terrified by a colony of ants or a snake, found that morning in the tree, or that they disliked to be observed by me and my servant boys.

Hyphantornis tricolor.

Hyphantornis tricolor, Hartl. J. f. O. 1854, p. 110; id. Orn. W. Afr. p, 126.

Hab. Sierra Leone, Liberia, Gold Coast.

One specimen (adult male) collected near Bavia (St. Paul's).

Notwithstanding all our painstakings we were not able to get more specimens of this beautiful weaver, which is still very rare in collections. It was shot from a high tree, and nothing at all can be said about its habits.

Iris brown, bill black, feet grayish brown.

Euplectes flammiceps.

Euplectes flammiceps, Swains. Birds W. Afr. I. p. 186, pl. 13; — Hartl. Orn. W. Afr. p. 127; — Boc. Orn. d'Ang. p. 335.

Pyromelana flammiceps, F. & Hartl. Vög. O. Afr. p. 414.

Hab. West Africa, from the Senegal to the R. Quanza; Eastern Africa.

A series of adult and young birds collected at Grand Cape Mount.

This is a tolerably common bird in the vicinity of Robertsport. The adult males like to sit on the top of some of the already mentioned cane, where they rest, quite isolated from other birds, and even from their females and young ones, for hours on the same spot. They are apparently proud of their brilliant plumage as they are indefatigable in exposing it in the most obvious manner.

Iris brown, bill of adult black, of young birds flesh-color, as show two specimens, shot in December; feet flesh-color.

Ploceus erythrops.

Ploceus erythrops, Hartl. Rev. Zool. 1848, p. 109; — Boc. Orn. d'Ang. p. 319.

Euplectes erythrops, Hartl. Beitr. Orn. W. Afr. pl. 8.

Foudia erythrops, Hartl. Orn. W. Afr. p. 129.

Hab. West Africa, from Senegambia to the River Quanza.

Collected at Bendo, near the Fisherman Lake.

Shot in brushwood, where they live in company with other small birds. They feed on grass seeds and visit the rice-farms when the rice is getting ripe.

Iris dark brown, bill horn-brown, feet dark flesh-color.

Nigrita bicolor.

Pytelia bicolor, Verzeichn. Brem. Samml. p. 76.

Nigrita bicolor, Sclat. in Jard. Contrib. Orn. (1852) p. 34,

pl. 83; — Hartl. Orn. W. Afr. p. 130; — Boc. Orn. d'Ang. p. 556.

Hab. West Africa, from the Casamanze to the Congo.

Collected at Bendo (Fisherman Lake), where it was met with in brushwood.

Iris blood-red, bill black, feet sooty brown.

Sycobius cristatus.

Malimbus cristatus, Vieill. Ois. chant. pl. 42.

Sycobius cristatus, Hartl. Orn. W. Afr. p. 132; — Boc. Orn. d'Ang. p. 331.

Hab. West Africa, from Liberia to the Congo.

Collected at Bavia, St. Paul's River.

This beautiful bird inhabits the underwood of the virgin forest, from where it visits the brushwood and thickets of old, abandoned farms. In the Cape Mount Country, where other species of *Sycobius* are pretty common, we have never met this bird.

Iris brown, bill and feet black.

Sycobius rubricollis.

Textor rubricollis, Swains. Anim. in Menag. p. 306 (1838).

Euplectes rufovelatus, Fras. Zool. typ. pl. 46.

Sycobius malimbus, Hartl. Orn. W. Afr. p. 132.

Malimbus rubricollis, Elliot, Ibis 1876, p. 461.

Sycobius rubricollis, Boc. Orn. d'Ang. p. 332.

Hab. West Africa, from Liberia to the Congo.

Collected at Soforé Place and near Bendo.

These birds are found in clearings, sitting on isolated trees and stumps, watching for insects. A female bird from Bendo, which I believe to be adult, is exactly like the adult male, except the front which is black, like in the specimen on the back-ground of the above cited plate in Fraser's Zoologia typica. Three full-grown young males from Soforé Place are similar to the above mentioned fe-

male, but have the black front intermixed with red feathers, showing the tendency to become entirely red.

Iris dark brown, bill a very dark blue, feet dark lead-color.

Sycobius scutatus.

Sycobius scutatus, Cass. Proc. Acad. Nat. Sc. Philad. 1849, p. 157; — Hartl. Orn. W. Afr. p. 132.

Malimbus scutatus, Elliot, Ibis 1876, p. 460.

Hab. West Africa, from Sierra Leone to the Gaboon.

Collected at Soforé Place, near Buluma and in the vicinity of Robertsport.

An apparently young male from Robertsport, shot the 5th May, with a flesh-colored bill, has the red crown and nape intermixed with black tips to some feathers, while nearly the entire throat, pure black in the adult bird, is intermixed with numerous red feathers. Another young male, shot at Soforé Place on the 27th of July, does not differ from the adult male except by the dark flesh-colored bill and the chin which is entirely red, while the black throat is also intermixed with red feathers. The habits of this species are the same as in the foregoing one.

Iris in all my specimens dark brown, bill of the adult black, feet grayish brown.

Sycobius nitens.

Sycobius nitens, J. E. Gray, Zool. Misc. I. p. 6; — Hartl. Orn. W. Afr. p. 133.

Malimbus nitens, Elliot, Ibis 1876, p. 463.

Hab. West Africa, from Sierra Leone to the Gaboon.

Collected at Bavia, St. Paul's River.

This bird seems to be still more scarce than *S. scutatus*, which is by no means a common bird. It is still less lively than its congeners and will hardly be seen outside

of the high forest. A male specimen from Bavia has the centre of the breast white, covered with a slight hue of rose-color.

Iris cherry-brown, bill and feet bluish horn-color.

Vidua principalis.

Emberiza principalis, Linn. Syst. Nat. I. p. 313.

Vidua erythrorhynchus, Swains. Birds W. Afr. I. p. 176, pl. 12.

Vidua principalis, Hartl. Orn. W. Afr. p. 136; — F. & Hartl. Vög. O. Afr. p. 428; — Boc. Orn. d'Ang. p. 345.

Hab. The whole of Africa below the Sahara.

Collected near Robertsport.

This bird is very common in old farms where grass and brushwood overgrow the former cultivation, and even in the gardens in the centre of villages. After their breeding time they live in large flocks together in the mentioned places where they feed on the seeds of grasses and weeds. Their vivacious manners, especially their flight with the long waving tail are very amusing. The chin in all Liberian specimens is black.

Iris brown, bill coral-red, feet brownish gray.

Penthetria macroura.

Loxia macroura, Gm. Syst. Nat. I. p. 845.

Vidua (Coliostruthus) macroura, Hartl. Orn. W. Afr. p. 137.

Penthetria macroura, F. & Hartl. Vög. O. Afr. p. 418; — Boc. Orn. d'Ang. p. 340.

Hab. The whole of tropical Africa.

Collected near Robertsport (Grand Cape Mount).

This species is pretty common in the same locality as *Vidua principalis*, however not keeping together in flocks like the latter, but rather alone or in pairs or together with their young ones after they have left the nest. Although they feed much upon grass seeds, they are very often seen

in rice-farms, never mixed, however, as far as I could observe, with other birds.

A young male in changing plumage was shot the 11th of May. Its colors underneath and on the sides of the head are grayish isabel, with brownish shaft-stripes on the feathers of the chest and sides of body, whole upper surface and tail grayish brown, with isabel-colored edges to the feathers of crown, back and scapulars. Quills and wing-coverts black, with a few isabel-colored edges left to the secondaries and wing-coverts, feathers of crown intermixed with some new developed black ones, the olive-yellow superciliar stripe still left, but intermixed with some black feathers, chin and throat entirely black, also the sides of the rump, the vent, thighs and under tail-coverts. Edge of wing and lesser wing-coverts pure yellow, under wing-coverts like in adult specimens. Bill blackish horn-color, lower mandible paler, feet brownish flesh-color, iris brown.

A female, apparently adult, shot 30th September in a very worn plumage, differs somewhat from the description, given, on the authority of Cassin, by Finsch and Hartlaub. The whole under surface of my specimen is isabel-color, tinged with olive-yellow, which color prevails on the eyebrows, throat and chest; thighs and sides of abdomen slight fulvous, upper surface olivaceous, with broad, dark brown shaft-streaks, especially on head, neck, mantle and axillaries. Tail-feathers, quills and larger wing-coverts grayish brown, lesser wing-coverts brown, conspicuously edged with olive-yellow, the primaries narrowly edged outside with silvery-gray. Iris brown, bill and feet pale flesh-color.

Adult male: Iris brown, bill and feet bluish black.

Spermospiza haematina.

Spermospiza haematina (♂) et *guttata* (♀), Vieill. Ois. chant. pls. 67 & 68; — Hartl. Orn. W. Afr. p. 138.

Spermospiza guttata, Boc. Orn. d'Ang. p. 349.

Hab. West Africa, from the Casamanze to the Congo.

Adult male and female, collected near Buluma.

Although both mentioned specimens have not been shot together at the same day, I believe them to belong to the same species, the more as the large collection of both spotted and unspotted specimens from the most different localities, contained in the Leyden Museum, do not furnish the least evidence for their being two different species. Both specimens are shot in brushwood, where they keep close to the ground, living upon grass seeds and insects.

Iris red, eye-lid milky white, bill metallic cyan-blue, tip and edges minium-red, feet sooty brown.

This species does not breed in colonies, as its nest was found alone in the underwood of high forest lying in a fork four feet above the ground. It had the shape of a ball of about 12 cm. diameter with the aperture on one side near the top, and is carelessly built of soft stalks and panicles of grass, without any lining. The nest contained two white eggs, which measured 1,9 cm. in length and 1,3 cm. in width.

Pyrenestes personatus.

Pyrenestes personatus, Du Bus, Bull. Acad. Sc. Brux. 1855, I. p. 151; — Hartl. Orn. W. Afr. p. 139.

Hab. West Africa: Senegambia (Du Bus), Liberia, Gaboon (Rchw.).

A fine series collected near Robertsport.

I found a little colony of these birds in a swamp-grove near Robertsport, at the inner slope of the strand-dune, with about 10 nests, from one of which I have caught an adult male and a breeding female. The nests are very large and consist of a heap of dead reed-leaves, sitting very well hidden in the fork of a thickly leaved, low bush, about 4′ above the swamp or the water. A narrow aperture in one side of the nest leads to the cup which

is lined with soft panicles of grass. The eggs, generally 6 in number, are pure white, 1,7 cm. long and 1,3 cm. wide. Birds, nests and eggs were collected in October. Amongst my collected nests exists a double one, viz. one built on the top of the other, the upper one only being inhabited when it was collected.

The fact that I have neither seen nor collected an adult male with black plumage — though I observed the colony during several days and got a whole series of undoubtedly adult males, females and young specimens — weighs very heavy for *P. personatus* being a good species.

The adult male agrees perfectly well with the description and plate 9 in Swainson, Birds W. Afr. (*P. sanguineus*), which is considered to be the female of *P. ostrinus* Vieill. The entire head, neck, breast, sides of body and upper tail-coverts are glossy crimson, while the upper surface of the tail is darker red with a brownish tinge. All the other parts of the plumage are olive-brown. The adult female differs from the male in having the glossy crimson, but faintly extended on the occiput, breast and sides of the body, which latter show but very slight marks of red. All the other parts are olive-brown. The full-grown young male is entirely olive-brown, except the upper tail-coverts and upper surface of tail, which are brownish red without any gloss.

Like *P. coccineus* this species differs from *P. ostrinus* by its smaller size, the wings being 6,2 cm. instead of 8,3 like they are in the latter species. While thus *P. ostrinus* is easily distinct by its larger proportions, it is really difficult if not impossible to say whether a brown-colored small specimen belongs to *P. coccineus* or to *P. personatus*. To make the matter still more intricate, both species inhabit the same contries, as one of Cassins types of *P. coccineus* came from Monrovia, thus nearly from the same locality as our own specimens.

Iris brown, eye-lid in adult males cobalt-blue, in females and young birds ochraceous, bill in adult males metallic

cyan-blue, in females and young birds dark steel-blue, feet olive-brown.

Pytelia schlegeli.

Pytelia schlegeli, Sharpe, Ibis 1870, p. 482, pl. 14, fig. 2 & 3 (adult male and young).

Hab. Liberia and Gold Coast.

An adult female, collected at Robertsport.

Shot in brushwood, covering an old farm, the 14th of December.

This example, although the only one met with in Liberia, will add somewhat to the knowledge of this exceedingly rare species. As the specimen, described by Mr. Sharpe as the female, is no doubt a young bird, I will adjoin here the description of the adult female.

The upper surface is olive-green, the rump somewhat brighter, but not golden brown as in the male, face ochraceous, throat and chest gray, tinged with olive-green, breast, sides of abdomen and flanks exactly like those of the adult male, centre of abdomen and thighs ashy gray, vent and under tail-coverts olive-green.

Iris dark brown, bill blackish blue at base, tip of both and greatest part of lower mandible rose-color, feet grayish flesh-color.

Amauresthes fringilloides.

Ploceus fringilloides, Lafr. Mag. de Zool. 1835, pl. 48.

Amadina (*Spermestes*) *fringilloides*, Hartl. Orn. W. Afr. p. 147.

Amauresthes fringilloides, F. & Hartl. Vög. O. Afr. p. 434.

Hab. West- and East Coast of tropical Africa (Senegal, Gambia, Liberia, Gaboon).

Collected with nests and eggs at Robertsport.

The adult female does not differ from the male; young specimens are uniform brown.

This bird is found in the vicinity of human habitations.

The tolerably large nest is built from the most various materials, as a kind of *Selaginella*, intermixed and lined with soft stalks and panicles of grass. The aperture is always on one side, like in the nests of *Pyrenestes* and *Spermestes*. It generally sits in the fork of a small plum-tree (*Mangifera indica*), an orange-tree or the like, about 5 to 10 feet above the ground, and never in colonies together. The eggs, six in number, are pure white and measure 1,5 cm. in length and 1,1 cm. in width. They were collected in November. After their breeding time these birds assemble, accompanied by their young ones, in large flocks, visiting during the day rice-farms and grassy plains and sleeping during the night, side by side, in reed-fields.

Iris white, upper mandible bluish black, lower one cyan-blue, feet black, soles whitish.

Spermestes bicolor.

Amadina (*Spermestes*) *bicolor*, Fras. P. Z. S. 1842, p. 145; id. Zool. typ. pl. 50, fig. 2; — Hartl. Orn. W. Afr. p. 148.

Hab. Liberia and Gold Coast.

A pair, with their nest and eggs from Soforé Place; tolerably common in the Interior of Grand Cape Mount.

This species likes still more human habitations than *A. fringilloides*. as it builds its nest in the same way as the first in plantains and trees middle in Negro villages, even in the roofs of the houses. The nest contained 6 pure white eggs of 1,4 cm. in length and 1 cm. in width, and was collected in August.

The habits of these birds are the same as those of the former species. Principal food grass seeds.

Iris black, bill blue, feet black.

Corythaix macrorhynchus.

Corythaix macrorhynchus, Fras. P. Z. S. 1839, p. 34; — Hartl. Orn. W. Afr. p. 157.

Musophaga macrorhyncha, Schl. Mus. P.-B. Cuculi, p. 76.

Hab. West Africa, from Sierra Leone to the Gaboon.

A large series collected on the banks of the St Paul's and in the Grand Cape Mount Country. A splendid and very lively bird in its wild state, always keeping in the densest crowns of the virgin forest, where it lives in pairs or, after the breeding season, together with its young ones. Shy as it is, it could not easily be found by the huntsman, if it did not betray itself by its crow-like voice, interrupted, now and then, by a mewing, exactly like that of a cat. When not disturbed, these birds can be very noisy, flapping their beautiful red wings and running after each other, like squirrels, along the branches. As their splendid wings would be too obvious to their enemies, they seldom fly very far at once, but advance by running through the foliage of the trees, hidden by the conformity of color between their plumage and that of the leaves. Their food consists of different kinds of wild fruits; insects were never found in dissected specimens.

Young birds have the crest uniform green, instead of edged with white and black, as shows a semi-adult female, collected at Bavia (1st February 1880).

Iris dark brown, bill carmine at base, culmen and tip orange yellow; feet blackish gray. Bare space round the eye crimson.

Turacus giganteus.

Turacus giganteus, Vieill. Enc. Meth. p. 1205; — Hartl. Orn. W. Afr. p. 159; — Boc. Orn. d'Ang. p. 133.

Musophaga gigantea, Schl. Mus. P.-B. Cuculi, p. 77.

Hab. West Africa, from Sierra Leone to Angola; Niam Niam Country (Bohndorff).

Several examples from the St. Paul's and from Grand Cape Mount.

This largest of all plantain-eaters is confined exclusively

to the virgin forest, where it lives, in companies of five or six specimens together, in the crowns of the highest trees, generally out of reach of gunshot. There they play together, especially in the morning and evening, running along the branches to a somewhat exposed point where they proudly stretch out their necks, spreading their wings and flapping up and down their fan-like tails, uttering, at the same time, a clamorous cry, like »cooruah, cooruah, rook, rook, rook". Probably on account of its pride, the Liberians call it »pea-cock" or »pea-fowl". It feeds upon a kind of bush-plum and other wild fruits, of which an enormous quantity is sometimes found in its crop.

Iris blood-red, bill orange-yellow, tip coral-red, feet brownish lead-color.

Bucèros elatus.

Buceros elatus, Temm. Pl. Col. 521; — Hartl. Orn. W. Afr. p. 161; — Schl. Mus. P.-B., Buceros, p. 18.

Buceros cultratus, Sundev. Oefvers. K. V. Ac. Förh. 1849, p. 160; — Hartl. Orn. W. Afr. p. 161.

Ceratogymna elata, Elliot, Mon. Buc. 1882.

Hab. West Africa, from Sierra Leone to Gaboon.

A large series, collected along the St. Paul's and at Grand Cape Mount.

The palm-bird, as the Liberians call it on account of its principal food, is, like many of its congeners, a very noisy bird. It keeps commonly in the highest forest-trees, from whence it visits the oil-palms when the palm-nut-season is at its highest (February-May). They live in small families together but seem, when the nestlings are able to keep on the wing and food begins to get scarce in the country, to form large flocks, swarming through the forest but coming back to a regular sleeping-place. We were once fortunate enough to come upon such a spot and were much struck by the lowness of the roosting-places they had chosen. This place was a swamp, surrounded by hills

in the midst of the high forest and covered with high reeds, brushwood and small trees. There they alighted shortly after sunset, about fifty together, fighting eagerly and with a great noise for the most comfortable perches not higher than 10 to 20 feet from the ground. As I wished to spare this place in order to make further observations, I did not shoot amongst them. A few days afterwards, however, a native huntsman who had found the place with the aid of my boy, disturbed their nights rest, and off they went for ever. Their cry is very loud and resembles much the sound of a trumpet, probably on account of the horn which may be used as a kind of sounding board. Their food consists almost entirely of palm-nuts and the fruits of several large kinds of forest-trees.

Iris red, in younger specimens brown, bill of the male black, as well as the basal part of the horn, upper part of the latter whitish horn-color, bill of the female entirely horn-color, feet lead-color, bare skin round the eyes, on chin, throat and gular pouch cobalt-blue.

Buceros atratus.

Buceros atratus, Temm. Pl. Col. 558; — Hartl. Orn. W. Afr. p. 162; — Schl. Mus. P.-B., Buceros, p. 18; — Boc. Orn. d'Angola, p. 113.

Sphagolobus atratus, Elliot, Mon. Buc. 1882.

Hab. West Africa, from Liberia to Angola.

A series collected on the St. Paul's River; not observed at Grand Cape Mount.

In its habits and food not different from *B. elatus*, but by far not as common as the latter.

Iris brick-red, in younger specimens reddish brown, bill grayish black, feet lead-color. Bare skin in male: Back-side of the horn, round the eyes, chin and gular pouch cobalt-blue, skin, as far as covered with feathers,

violet; in female: bare spaces round the eye, chin and gular pouch cobalt, throat whitish, feathered skin violet.

Buceros cylindricus.

Buceros cylindricus, Temm. Pl. Col. 521; — Hartl. Orn. W. Afr. p. 162; — Schl. Mus. P.-B., Buceros, p. 17.

Bycanistes cylindricus, Elliot, Mon. Buc. 1882.

Hab. Liberia and Gold Coast.

Two females, collected near Soforé Place.

This bird seems to be rarer than either of its already mentioned congeners, as we have never found it at Grand Cape Mount. It lives more quietly than any other species of large African Hornbills and hides itself in the thickest crowns of trees.

Iris in the collected specimens reddish brown, bill horn-color, feet brown.

Buceros fistulator.

Buceros fistulator, Cass. Proc. Ac. Nat. Sc. Philad. 1850, p. 68; — Hartl. Orn. W. Afr. p. 162; — Schl. Mus. P.-B., Buceros, p. 16.

Pholidophalus fistulator, Elliot, Mon. Buc. 1882.

Hab. West Africa, from Liberia to Gaboon.

A large series, collected at Soforé Place.

This species is the most noisy of all we met with, and is exceedingly well entitled to bear its name. We saw it only in the rainy months of July, August and September, when it visited in small flocks with a clock-like regularity some fruit-trees, overshading our thatch-house in the centre of the virgin forest.

Iris dark brown, bill black, tip and lateral spots at base whitish horn-color, feet and fore-part of tarsus blackish brown, hind part lead-color.

Buceros albocristatus.

Buceros albocristatus, Cass. Journ. Ac. Nat. Sc. Philad. I. p. 135, pl. 15; — Schl. Mus. P.-B., Buceros, p. 9.

Buceros (*Berenicornis*) *albocristatus*, Hartl. Orn. W. Afr. p. 163.

Anorrhinus albocristatus, Elliot, Mon. Buc. 1882.

Hab. West Africa, from Liberia to the Congo.

A fine series of nestlings, semi-adult and adult specimens collected on the St. Paul's and in the district of Grand Cape Mount.

This species lives not like the preceding ones in flocks together, but is, although we frequently met with it, a solitary and quiet bird. It is an exclusive inhabitant of the high forest, where it is said to follow the monkeys and to warn them by mewing tones, exactly like those of a cat, when their situation seems to become dangerous. On this account the Liberians call the species the monkey-bird. Although we bought a pair of nestlings of this species at Bavia at the end of January, we were not able to get any information about the interesting sitting time of these birds. One of them was still but half-fledged when we got it, but after about a week's living at our station, when they died, they had already got nearly their full plumage, which was not different in color from that of adult specimens. Their bills were, when alive, green, blackish at base, iris clear blue, feet grayish horn-color. In adult specimens the bill is black, horny white at the base of the upper mandible, iris yellowish white, feet dark blue, turning into lead-color or black after death.

One of my specimens I shot, together with *B. semifasciatus* and *B. camurus*, on the same tree in a quarter of an hour, when they came successively to make their meal on the bush-plumes with which the tree was covered.

Buceros semifasciatus.

Buceros semifasciatus (Temm. in litt.), Hartl. J. f. O. 1855, p. 356; id. Orn. W. Afr. p. 163; — Schl. Mus. P.-B., Buceros, p. 13.

Buceros fasciatus, Rchw. J. f. O. 1875, p. 13, and 1877, p. 18.

Tockus semifasciatus, Elliot, Mon. Buc. 1882.

Hab. West Africa, from Senegambia to the Gold Coast; Gaboon?

A large series, collected along the St. Paul's River and at Grand Cape Mount, proves this species to be a well-established one, although Dr. Reichenow (l. c.) believes it to be but the not fully adult stage of *B. fasciatus*. Unfortunately I could not obtain quite young specimens, but a not full-grown one has the white to the 2nd and 3rd pair of tail-feathers much smaller than fully adult ones and intermixed with black spots, which peculiarity might lead to the conclusion that in young birds these feathers are entirely black, like Dr. Reichenow observed in young specimens of his *B. fasciatus*. The strongest argument of these feathers never becoming entirely white as is the case in *B. fasciatus*, is given by a very old moulting male, collected at Bavia. This specimen has the fully developed 3rd pair of tail-feathers tipped with white at the usual length of 8 to 9 cm., and also is the 2nd pair, though this latter is freshly moulted and but a little of the black basal part developed. In these half-grown feathers the white of the terminal part is arranged in the same way as in fully developed ones, i. e. it reaches farther up towards the base on the inner web than it does on the outer one, and still farther along the shafts. These two facts will thus lead to the conclusion, that in the first plumage the white tips are gradually obtained by a mere change of color, while moulted feathers have the white tips at once at the usual length. Moreover among more

than 30 specimens shot and examined during my stay in Liberia, there was not one that showed any tendency of the tail-feathers to become entirely white, like Dr. Reichenow thinks they will regularly do in the adult stage of plumage. Certainly his specimens with entirely white tail-feathers represent the adult, those with more or less white on the terminal part, the young stage of the true *B. fasciatus*, which is at once distinguished by the color of the bill, which is red at the point and the lower surface of the lower mandible in the adult stage.

This species of Hornbill is the commonest of all in Liberia. Although an inhabitant of the primeval forest, it visits isolated trees and small groups of trees near the plantations of the Negroes, where it is easily observed by its hoarse, disagreable cry, which resembles much that of our Magpie. Its principal food consists of palmnuts.

Iris coffee-brown, bill in young specimens entirely yellowish white, in adult ones the point pure black, which color extends farther on at each side along the ridge, at the edge of the bill and from there in an oblique band downward on the lower mandible; feet greenish brown. A young but full-grown female has the partly bare skin on the neck chrome-yellow.

Buceros hartlaubi.

Tockus hartlaubi, Gould, P. Z. S. 1860, p. 380; — Sharpe, Ibis 1870, p. 485; — Elliot, Mon. Buc. 1882.

Buceros Nagtglasii, Schl. Tijdschr. v. Dierk. I. 1863, p. 56, pl. 2; id. Mus. P.-B., Buceros, p. 16.

Hab. West Africa, from Liberia to the Loango Coast.

Male and female, collected at Soforé Place.

A comparison of my two specimens with the type of *B. Nagtglasii* and another example labelled »West Africa" show that they all agree perfectly with both above mentioned descriptions, given by Gould and Schlegel. The description by Schlegel is a good completion of that from

Gould, as it contains some details which have been overlooked by the latter, who has, for instance, omitted to mention the whitish superciliar band, carried on up to the neck and bordering the whole crown of the head.

My female bird from Liberia, undoubtedly a full-grown one, is somewhat smaller than the three male specimens in our Museum, and its much shorter bill is entirely black. In the color of its plumage there exists not the least difference between male and female. The prominence of the bill of the latter is pretty well developed and would enable it to pass for a somewhat younger male.

The measurements of the four specimens under my notice are as follows (in cm.):

	culmen.	wing.	tail.	tarsus.
Males	5,7—6,5	14,5	16,3	2,5
Female	4,7	13,6	14	2,2

Iris brown, bill of male black, with a tinge of blood-red, which color prevails at the tip; bill of female entirely black, feet black.

This species is, still more than *B. albocristatus*, very quiet in all its motions. It never leaves, as I think, the virgin forest, where alone or in pairs it flies noiselessly through the lower branches of the trees and is only occasionally observed by the huntsman. We have never heard a note from it.

Buceros camurus.

Tockus camurus, Cass. Proc. Acad. Nat. Sc. Philad. 1856; — Boc. Orn. d'Ang. p. 541; — Elliot, Monogr. Buc. 1882.

Buceros camurus, Hartl. Orn. W. Afr. p. 267.

Buceros pulchrirostris, Schl. Tijdschr. v. Dierk. I. 1863, p. 74, pl. 4; id. Mus. P.-B., Buceros, p. 15.

Hab. West Africa, from Liberia to the Loango Coast.

Six specimens (two males and four females) collected near Soforé Place.

When Prof. Schlegel, in 1862, established his *B. pulchrirostris*, he was well aware of its close relationship with Cassin's *Tockus camurus*, which he stated in the following words: »Il paraît que notre *Buceros pulchrirostris* est très-voisin du *Tockus camurus* de Cassin, originaire du Cap Lopez, et qu'il ne s'en distingue en effet que par une taille un peu moins forte, et par son bec noir au dernier quart de sa longueur; mais comme ces caractères sont constants dans les trois individus que nous possédons de cette espèce, comme ceux du *B. camurus* le sont dans les trois individus examinés par Mr. Cassin, nous n'avons pas cru devoir confondre ces deux oiseaux sous un même nom." — Since that time, the Leyden Museum has obtained two specimens of the true *Tockus camurus*, also collected by Du Chaillu at the Cape Lopez and at the Gaboon and by the German Expedition on the Loango Coast. As they had, like Cassin's types, their bills entirely red, they could but confirm Prof. Schlegel's ideas, developed in the above cited passage.

My Liberian specimens now show that Mr. Elliot is right in uniting *B. pulchrirostris* with Cassin's *B. camurus*, under the latter name. There is not the least difference in color of plumage between the specimens of the three cited localities. The color of the bill, however, which formed the strongest argument of Prof. Schlegel, shows evidently the identity of both species, as otherwise four of my Liberian birds, with entirely red bills, would belong to *B. camurus*, while the two others, provided with black tips, would belong to *B. pulchrirostris*. The following table will show the difference in size between the specimens from the Gaboon, the Gold Coast and Liberia. There seems not to be any remarkable difference in size and color between males and females of the same locality except the larger size of bill in the males. The black tip of the bill is by no means characteristic of one or the other sex, being more probably peculiar to younger specimens of both sexes.

	bill. cm.	wing. cm.	tail. cm.	tarsus. cm.
Gaboon:	6,4—6,5	14,7—15,3	14,8—15	3
Gold Coast:	5,4—5,9	14,3—14,6	14,2—15	3
Liberia:	5,8—6,4	13,7—14,6	13,7—14,9	3

(The bills are measured in a straight line from the base of the culmen (front) to the tip.)

Although very rare and not different in its habits from *B. hartlaubi*, this bird is, on account of its more lively colors, especially its beautiful red bill, more easily obtained than the preceding species.

Iris whitish yellow, bill in quite adult stage entirely coral-red, in younger birds with tip and anterior part of culmen black, feet gray.

Psittacus timneh.

Psittacus timneh, Fras. P. Z. S. 1844, p. 38; — Hartl. Orn. W. Afr. p. 167; — Finsch, Papag. II. p. 315; — Schl. Mus. P.-B. Psittaci, Revue, p. 10.

Hab. Liberia and lower parts of Sierra Leone.

Observed and collected along the St. Paul's, as far as Soforé Place, and in the whole district of Grand Cape Mount, as far as Cobolia, on the Marfa River.

Although Dr. Finsch, in his celebrated Monograph of the Parrots, is not at all convinced of its being really a separate species, I have not the least doubt that *P. timneh* is as truly so as *P. erythacus* itself. They live like *P. erythacus*, in large flocks, sometimes of many hundreds, together and keep the whole year the same trees for sleeping-places. These colonies give a peculiar attraction to the vast forest-regions of the Interior. Early in the morning, with the first cock-crow, they leave their roosting places crying, whistling and singing, and scatter over the forest in order to seek for food, which consists of different kinds of wild fruits, especially palm-nuts and the seeds of Tamarinds. When the corn and rice begin

to get ripe, they are sometimes a plague for the farmers, as they eat very much and destroy much more. They return shortly after sunset, some few much later, with the same noise, and it is pretty late when, at last, silence begins to reign in the gigantic sleeping-trees. In the morning as well as in the evening, the flocks keep to their regular routes, but once disturbed by a shot or the like, they will the next time pass the dangerous spot high in the air, or, when disturbed repeatedly, choose another route. They are not easily killed and need a good shot. One of the before mentioned sleeping places I discovered on the Island of Alin, in the St. Paul's River near Soforé Place. As the place was in a swamp, I could not remain there till sunset. Nevertheless I shot several specimens which were preparing for their night's rest, and it was hard work to catch and kill them after they had fallen.

Although this species is very common in Liberia, I was not able to get young specimens of it. Some, probably in a transitional stage of plumage, have some of the wing-coverts of a yellowish or brownish clay-color. The tail-feathers and, in adult specimens, the under tail-coverts are reddish brown, and in one, collected at Buluma near the Fisherman Lake, rusty red, as is mentioned in the original description by Fraser. But never — and we have examined more than fifty specimens — did we find the pale gray general color, the beautiful red tail and the black bill of *P. erythacus*. The Liberian gray Parrot is, moreover, not by far as intelligent and docile as his more southern congener, and is therefore very seldom found in captivity, while *P. erythacus* is frequently brought to Liberia from down the coast by the Krooboys. I regard it as an established fact that *P. timneh* is the northern representative of *P. erythacus*, like *Agapornis swinderniana* for its congener *A. pullaria*. If it is really found at the Gaboon, as is ascertained by several authors, I cannot say, as we have no gray Parrots from that locality, but it is probable enough that now and then younger specimens

of *P. erythacus* will have been regarded as *P. timneh*. Whatever may be the truth with our *P. timneh*, its real habitat must be recognized to be Liberia and lower Sierra Leone, nearly as far up as Freetown. Which of the two, *P. erythacus* or *P. timneh*, will be found on the Ivory Coast, is still unknown.

The iris of all our obtained specimens was pale yellow till yellowish white, the base of the maxilla pale horn-color, tip and lower mandible black, feet gray, ear-coverts almost black.

Psittacula swinderniana.

Psittacus swindernianus, Kuhl, Consp. Psitt. 1820, p. 62, pl. 2 (fig. mala).

Psittacula swindereni, Finsch, Papag. II. p. 632; — Cab. J. f. O. 1877, pl. 5, fig. 2 (fig. bona).

Agapornis picta, Hartl. Orn. W. Afr. p. 169.

Agapornis swinderniana, Hartl. Ibis 1879, p. 84.

Hab. Liberia.

Eight specimens were collected on the Island of Alin, in the St. Paul's River, near Soforé Place.

After Mr. Schweitzer, who collected 10 specimens near the Junk River, we have been the first to procure this fine species again. Although we seized every opportunity, we were but once fortunate enough to meet with a small flock of these rare birds, which in three days time we had almost entirely extirpated. They were found on the above mentioned, thickly wooded Island, sitting in the top of a very high fruit-tree, and heavy shot had to be used in order to reach them. I suppose they were travelling through the forest in order to seek for food, as many birds do after the young generation has got strong enough to keep on the wing. On account of their color, their small size and the height they generally keep, they are by no means easily discovered. The only cry we heared

utter them was something like the creaking of a rusty hinge.

Our specimens were shot the 31st of May and the 2nd of June. After Dr. Hartlaub's note on this bird in Ibis l. c., there is but little to say about the adult stage of plumage. I will only mention that all the tail-feathers are black at the base; the rest of the two central ones is uniform green. The five lateral pairs are better called black, broadly banded across with scarlet and tipped with green. The adult male is not different from the female. The full-grown young male differs from the adult ones by the want of the black collar across the neck, which is only indicated by some black feathers on each side, and by a somewhat duller green color.

Iris yellow, maxilla black, lower mandible bluish horn-gray, feet gray.

Pogonorhynchus hirsutus.

Pogonias hirsutus, Swains. Zool. Illustr. II. pl. 72; id. Birds W. Afr. II. p. 172; — Hartl. Orn. W. Afr. p. 172.

Pogonorhynchus hirsutus, Goffin, Mus. P.-B., Buccones, p. 11.

Hab. West Africa, from Sierra Leone to the Loango Coast.

Four specimens collected at Soforé Place and near Buluma. These birds are regularly found in the borders of high forest, where they live in pairs. They are very sluggish, morose birds, uttering a kind of monotonous song, which the survivor continues with indifference after its mate is shot down, without moving from the spot. They live upon insects and their larvae, picked up from branches and pecked out from under old bark. There is no essential difference between male and female.

Iris carmineous, bill black, feet blackish gray.

Megalaima duchaillui.

Barbatula duchaillui, Cass. Proc. Acad. Nat. Sc. Philad. 1855, p. 324.

Pogonias (*Buccanodon*) *duchaillui*, Hartl. Orn. W. Afr. p. 171.

Megalaima duchaillui, Goffin, Mus. P.-B., Buccones, p. 39.

Cladurus duchaillui, Rchw. J. f. O. 1877, p. 17.

Xylobucco duchaillui, Boc. Orn. d'Ang. p. 540.

Hab. West Africa, from Liberia to the Loango Coast.

A pair, collected at Soforé Place, shot in a high tree in the virgin forest, where they sat side by side upon a twig.

Iris cherry-red, bill grayish black, feet lead-color.

Megalaima leucolaima.

Barbatula leucolaima, Verr. Rev. et Mag. de Zool. 1851, p. 263; — Hartl. Orn. W. Afr. p. 173 (except synon.); — Boc. Orn. d'Ang. p. 539.

Megalaima leucolaima, Goffin, Mus. P.-B., Buccones, p. 46.

Megalaema bilineata, Rchw. J. f. O. 1877, p. 17.

Hab. West Africa, from the Senegal to the Loango Coast.

Collected in the forests behind Monrovia.

Iris yellow, bill and feet grayish black.

Megalaima bilineata Sund., considered identical with *M. leucolaima* by Dr. Hartlaub, l. c., and after him by Dr. Reichenow (Expedition to the Loango Coast), is a well-defined species, as shows a fine male, collected by Wahlberg, in the Leyden Museum. This latter differs from *M. leucolaima* by its considerably larger size, and in the yellow on the wings, which is strongly tinged with green. The measurements of both species are as follows (in cm.):

	wing.	tail.	tarsus.	bill.
M. bilineata:	5,7	3,3	1,6	1,2
M. leucolaima:	4,7	2,3	1,2	1

Megalaima scolopacea.

Xylobucco scolopaceus, Bonap. Consp. Av. I. p. 141; — Boc. Orn. d'Ang. p. 108.

Barbatula scolopacea, Hartl. Orn. W. Afr. p. 174.

Megalaima scolopacea, Goffin, Mus. P.-B., Buccones, p. 47.

Hab. West Africa, from Liberia to the Loango Coast.

Collected near Bavia, also observed at Soforé Place.

Habits the same as in the two preceding species.

Iris pale yellow, bill black, feet grayish green.

Gymnobucco calvus.

Bucco calvus, Lafr. Rev. Zool. 1841, p. 241.

Gymnobucco calvus, Hartl. Orn. W. Afr. p. 174; — Rchw. J. f. O. 1875, p. 8; — Boc. Orn. d'Ang. p. 540.

Megalaima calva (partim), Goffin, Mus. P.-B., Buccones, p. 49.

Gymnocranus calvus, Rchw. J. f. O. 1877, p. 17.

Hab. West Africa, from Liberia to the Loango Coast.

Collected at Soforé Place and near Buluma.

As in all my 6 collected specimens, amongst which adult of both sexes and an immature male, the tufts behind the nostrils are wanting, I incline to the opinion of Drs. Hartlaub and Reichenow, l. c., who separate such specimens specifically from the tufted *G. peli*. Mr. Goffin, l. c., unites both species, on account of a most peculiar freak of chance, all his specimens with tufts at the nostrils (*G. peli*) being males, while all specimens wanting those tufts (*G. calvus*) were females. Though it is easy enough to distinguish adult specimens of both species on account of the above mentioned tufts and the white shaft-

streaks on chest and interscapularies, which streaks are present in *G. calvus*, but wanting in *G. peli*, it is almost impossible to distinguish immature birds of both species, as the mentioned characters are wanting in both of them entirely.

These birds live together in little colonies of 4 to 10 pairs and make their nest-holes, like the woodpeckers, in dead tree-trunks, sometimes three to six pairs in the same trunk. They are as much as I could observe, not by far as sluggish as Dr. Reichenow describes them. I met with them several times in the forest, and always they were very noisy and desirous of fighting, moving quickly from branch to branch till they found a fruit-tree, where the noise became still greater than beforehand. They feed upon several small kinds of wild fruits.

Iris in both sexes grayish brown, bill dirty flesh-color, feet gray, bare skin on the head grayish black.

Trachyphonus goffini.

Capito Goffinii (Schl. in Mus. Bat.), Goffin, Mus. P.-B., Buccones, p. 72.

Trachyphonus goffini, Marsh. Capit. p. 32; — Sharpe, Cat. Afr. Birds, p. 16.

Hab. Liberia and Gold Coast.

Collected near Soforé Place.

The Liberian specimens are not at all different from those from the Gold Coast. They are found in pairs in the brushwood of old farms, where, at short intervals, their deep call »hoop" can be heared. The huntsman, once acquainted with this peculiar note, can approach the birds easily enough, as they are not shy and look very calmly at the barrel directed upon them.

Iris red, bill orange-yellow, bare skin round the eye bluish black, feet grayish brown.

Indicator variegatus.

Indicator variegatus, Less. Tr. d'Orn. p. 155; — Schl. Mus. P.-B., Cuculi, p. 2; — Sharpe, Layard's Birds S. Afr. p. 167.

Indicator major (jun. av.), Hartl. Orn. W. Afr. p. 184.

Indicator stictithorax, Rchw. J. f. O. 1877, p. 110.

Hab. Liberia, Gold Coast, Cameroons; South Africa.

A female only, obtained at Soforé Place.

While the only specimen from West Africa in the Leyden Museum, collected by Pel on the Gold Coast and labelled as a female, is spotted with dirty white all over its lower surface, the Liberian specimen is spotted only on the chest. Chin and throat are dirty white with a narrow dark shaft-streak to each feather. The feathers on breast, sides of body and thighs are grayish green, broadly edged with isabel, which color prevails on the flanks and still more on the under tail-coverts. Centre of abdomen and vent entirely isabel. Whole upper surface green, forehead not speckled with white.

Iris reddish brown, bare space round the eye cobalt-blue, bill horn-brown, feet green. Wing 9,6 cm., tail 6,5, tarsus 1,5, bill 1,3 (from front). Its cry is loud and shrill. Although bees-nests are very abundant in the forests round Soforé Place, we never saw this bird in the quality of a Honey Guide. The stomac contained some hard shells of beetles.

Mesopicus pyrrhogaster.

Picus (*Chloropicus*) *pyrrhogaster*, Malh. Rev. Zool. 1845, p. 399.

Dendropicus (*Mesopicus*) *pyrrhogaster*, Hartl. Orn. W. Afr. p. 180.

Mesopicus pyrrhogaster, Hargitt, Ibis 1883, p. 419.

Hab. West Africa, from Sierra Leone to the Gold Coast.

Collected in the forests behind Monrovia.

Iris brown, bill lead-color, feet bluish black.

Dendropicus lugubris.

Dendropicus lugubris, Hartl. Orn. W. Afr. p. 178; — Hargitt, Ibis 1883, p. 445, pl. 12, fig. 2.

Hab. West Africa, from Liberia to the Gold Coast.

One specimen (adult ♂) collected in the forests behind Monrovia.

Iris carmineous, bill grayish black, feet grayish green.

Campothera maculosa.

Picus maculosus, Valenc. Dict. Sc. Nat. XI. 1826, p. 173 (♀); — Rchw. J. f. O. 1876, p. 95.

Dendromus brachyrhynchus, Swains. Birds W. Afr. II. p. 160 (nec Hartl. Orn. W. Afr. p. 182).

Dendropicus olivaceus (Gray), Hartl. Orn. W. Afr. p. 177.

Campethera vestita (♀), Cass. Proc. Ac. Nat. Sc. Philad. 1863, p. 197; id. Journ. Acad. Philad. 1863, p. 458, pl. 51.

Campothera maculosa, Hargitt, Ibis 1883, p. 475, and *C. vestita*, p. 479.

Hab. Senegal, Sierra Leone, Liberia, and Gold Coast where it represents the nearly allied *C. permista* from farther down the Coast.

Two males and two females, amongst which a pair, shot near its nest in the forests behind Monrovia.

One of my collected females agrees in every respect with Cassin's description of *C. vestita*, l. c., the other has the back, axillaries and wing-coverts slightly sprinkled with fulvous shaft-streaks, occasionally enlarging to one or two fulvous spots on each feather. The male of the mentioned pair is spotted in the same manner, while the female belonging to it has no spots at all. The males only differ from the females by having the feathers on the upper surface of head and neck tipped with crimson instead of pale fulvous. The under wing-coverts in all four specimens are uniform pale yellow, faintly tinged with fulvous or golden-yellow. Length of wing 9,8 to 10,2 cm., tail 6,5 cm.

The nest-hole did not differ from those of other Woodpeckers.

Iris chestnut-brown, bill grayish horn-color, feet grayish green.

Campothera caroli.

Chloropicus caroli, Malh. Rev. et Mag. de Zool. 1852, p. 550.

Dendromus (*Pardipicus*) *caroli*, Hartl. Orn. W. Afr. pp. 182 & 274.

Campothera caroli, Hargitt, Ibis 1883, p. 480.

Hab. West Africa, from Liberia to the River Quanza (the latter locality on the authority of Mr. Barbosa du Bocage).

An adult female, collected near Bavia.

This specimen agrees perfectly well with Mr. Hargitt's description (l. c.) of the adult male, except the crown, which is dark olivaceous green instead of olive brown and tipped with red. The superciliary stripe and under wing-coverts are verdigris, the rounded spots on the lower surface, those on chin and throat not excepted, are ochraceous buff with a greenish tinge.

Iris brown, bill horn-gray, feet grayish green.

Campothera nivosa.

Dendromus nivosus, Swains. Birds W. Afr. II. p. 162; — Hartl. Orn. W. Afr. p. 183.

Dendrobates congicus, Boc. Orn. d'Ang. p. 535.

Campothera nivosa, Hargitt, Ibis 1883, p. 482.

Hab. West Africa, from the Casamanze to the Loango Coast.

Two males, collected near Soforé Place and Robertsport.

The round spots on the under surface in both of our Liberian specimens are ochraceous buff, tinged with green, like in the foregoing species; ear-coverts, sides of the neck and under wing-coverts of the specimen from Soforé Place

verdigris; in that from Robertsport the ear-coverts are paler green, the under wing-coverts yellowish buff.

Iris brown, bill grayish horn-color, feet olive-green.

The specimen from Robertsport was shot from the nest in a bosquet that covered a swamp right behind the beach. The nest-hole, in an old tree about 8′ from the ground, contained two pure white, conical eggs of 2 cm. length and 1,5 cm. width.

Centropus francisci.

Centropus francisci, Bonap. Consp. I. p. 107; — Hartl. Orn. W. Afr. p. 186; — Schl. Mus. P.-B. Cuculi, p. 71; — Sharpe, P. Z. S. 1873, p. 621.

Hab. West Africa, from Liberia to the Cameroons.

A nearly adult, full-grown female, in transitional stage of plumage, from Bavia (St. Paul's), and a nestling from Buluma (Grand Cape Mount).

Both these specimens show in all important points the same distribution of color as the adult bird. They are, however, distinguished from the latter by narrow black bands across the tips and inner webs — in the nestling also on the outer ones — of the primaries and the whole surface of the secondaries, axillaries and wing-coverts (in the fully adult specimens, contained in the Leyden Museum the black bars are entirely wanting). The nearly adult female has the feathers on head, throat and neck greenish black, those of the latter fulvous at base, all of them speckled with white along the shafts and intermixed with many black-shafted steel-blue ones (the color of the adult). A patch on each side of the head behind the ear is fulvous, another smaller one on the throat dirty white. These peculiarities might lead to the conclusion, that the head and neck of the young birds must be fulvous, with white shafts to all the feathers, and that this color would change successively, beginning at the tips, into greenish black, which later would give way to the blue gloss and

the black shafts of the fully adult stage. Might there not be concluded by analogy that the same will be the case with the green-glossed *C. senegalensis* and the blue-glossed *C. monachus*, which latter would then turn out, as Schlegel and others already suggested, to be the fully adult *C. senegalensis*?

It is now, after all, very estonishing that the afore mentioned nestling, whose feathers on the forehead, throat, abdomen and tail are just making their appearance, has its feathers on head and neck entirely greenish black, without being intermixed with any brown based or entirely brown ones. The shafts are glossy black, those of the neck with two white speckles each. Having no more material fit to help me in resolving this question, I cannot but imagine that in the male nestlings the greenish black plumage on head and neck will be developed at once, whilst these parts in the females would first be fulvous brown, turning afterwards into greenish black and finally acquire the steel-blue gloss of the adult bird. Having called the attention of Mr. Stampfli upon this subject I shall, as I hope, soon be able to dispose of a number of specimens, sufficient to settle this interesting question.

The habits of this and the following species have been so repeatedly spoken of that I have nothing to add, except that the nest with the above mentioned young bird was found in high grass amongst brushwood, about a foot above the ground. It is very voluminous and consists of carelessly heaped up grass and reed-leaves. It was found the 6th of December and contained two nestlings, which we tried to keep alive, but one got lost the same day, and the other died a few days afterwards.

Iris of the nearly adult bird red, of the nestling grayish brown, bill black, feet bluish gray.

Centropus senegalensis.

Cuculus senegalensis, Linn. Syst. Nat. I. p. 169.

Centropus senegalensis, Hartl. Orn. W. Afr. p. 187; — F. & Hartl. Vög. O. Afr. p. 526 (partim); — Sharpe, P. Z. S. 1873, p. 617; — Boc. Orn. d'Ang. p. 149.

Centropus monachus, Schl. Mus. P.-B. Cuculi, p. 72 (partim).

Hab. West Africa, from the Senegal to the Quanza; North Eastern, Eastern and Southern Africa.

Collected along the St. Paul's and at Grand Cape Mount.

As only adult specimens were collected, I cannot add anything to the knowledge of the group, united by Schlegel, Finsch and Hartlaub, but again considered to be three different species by recent authors. All my Liberian specimens have a green gloss on head and neck.

The cry of this as well as of the preceding species, has earned them the name of »Doodoo" amongst the Natives and the Liberian settlers. It lives in brushwood and is regularly found in the vicinity of human habitations.

Iris red, bill black, feet lead-color.

Phoenicophaës aeneus.

Cuculus aereus, Vieill. Nouv. Dict. d'Hist. Nat. VIII. p. 229.

Zanclostomus aereus, Hartl. Orn. W. Afr. p. 187; — F. & Hartl. Vög. O. Afr. p. 525 (part.); — Rchw. J. f. O. 1875, p. 2; — Boc. Orn. d'Ang. p. 147.

Phoenicophaës flavirostris (Swains.), Schl. Mus. P.-B. Cuculi, p. 50.

Ceuthmochares aeneus, Sharpe, P. Z. S. 1873, p. 610; id. Layard's Birds S. Afr. pl. 5.

Hab. West Africa, from Senegambia to Angola.

Collected along the Fisherman Lake.

Only blue specimens were obtained. Since Prof. Schlegel has separated the western form (*flavirostris*) from the southern (*aëreus*) l. c., there has been obtained in 1872, a very pronounced glossy green specimen, not distinguishable from the South African bird, said to come from the

Gambia. Having no more specimens in our collection to support this fact, I think it better not to attach too much importance to it, because there is not sufficient certainty of its really coming from the place mentioned. A plate with good figures of both *P. aeneus* and *australis* is given by Mr. Sharpe in his Birds of South Africa.

Iris carmineous, bill lemon-yellow, a circle round the eye grass-green, bare skin ultramarine, feet black.

Coccystes cafer.

Coccystes cafer (Licht.), Sharpe, P. Z. S. 1873, p. 596.
Coccystes afer (Leach), Schl. Mus. P.-B., Cuculi, p. 44.
Oxylophus ater (Steph.), Hartl. Orn. W. Afr. p. 188.
Hab. Tropical and Southern Africa.
Collected at Bavia, on the St. Paul's River.

This bird is pretty common in all the places we have visited, and keeps by preference in brushwood and the skirts of the high forest in the vicinity of the rivers.

The plumage of two young specimens is in a well-advanced state of change, showing a fully developed alar speculum and being intermixed all over, especially on crest, throat and wings, with feathers belonging to the adult plumage. One of these specimens was shot in January, the other in March.

Iris grayish brown, bill black, feet lead-color.

Chrysococcyx cupreus.

Cuculus cupreus, Bodd. Tabl. Pl. Enl. p. 40; — Schl. Mus. P.-B., Cuculi, p. 31; — Sharpe, P. Z. S. 1873, p. 591.
Chrysococcyx auratus, Hartl. Orn. W. Afr. p. 190.
Chrysococcyx cupreus, F. & Hartl. Vög. O. Afr. p. 522; — Rchw. J. f. O. 1875, p. 6; — Boc. Orn. d'Ang. p. 143.
Hab. Tropical and Southern Africa.
Collected in the forests behind Monrovia.

This splendid bird is frequently met with in old abandoned farms.

Iris and orbit red, bill black, paler at the base of the lower mandible, feet lead-color.

Treron calva.

Columba calva, Temm. & Knip, Pig. p. 35, pl. 7.

Treron crassirostris, *calva* et *nudirostris*, Hartl. Orn. W. Afr. p. 192.

Treron calva et *nudirostris*, Schl. Mus. P.-B., Columbae, p. 46 and 47.

Treron calva, Boc. Orn. d'Ang. p. 379; — Shelley, Ibis 1883, p. 267.

Hab. Western and Eastern tropical Africa.

Collected at Soforé Place and near the Fisherman Lake.

The late Prof. Schlegel based his both above cited species upon a slight difference in color and size, without attaching any importance to the more or less bare front in the different specimens. My Liberian specimens now seem to form a link between both species, being similar to *T. nudirostris* in color and to the larger *T. calva* in size, and so I fully agree with Capt. Shelley, who unites all three above mentioned species under the name of *calva*.

These birds seem to live in pairs in the vast forest-regions of the Interior during their breeding season, but afterwards they appear in large flocks together in the coast region, where they feed for a great part upon the buds of the Mangrove.

On that reason the Liberians call it the Mangrove Pigeon. Excepting the domestic fowl this is the only bird which is sold and used for food in Monrovia.

Iris blue, surrounded by a rose-colored rim, base of bill coral-red, tip bluish horn-color, feet yellow.

Columba unicincta (Plate 6).

Columba unicincta, Cass. Proc. Acad. Nat. Sc. Philad. 1859, p. 143; — Shelley, Ibis 1883, p. 277.

Hab. Liberia and Gaboon.

A single specimen (♀) collected at Soforé Place.

As this specimen agrees in every respect with the plain description given by Cassin, l. c., I have nothing to add to it. This fine Pigeon is certainly an exceedingly quiet or rather rare bird, as the captured specimen is the only one we ever saw. It was shot on the large and thickly wooded island Alin, near Soforé Place, in the St. Paul's River. Not acquainted with Cassin's description, I thought it at first a new species, but notwithstanding all our painstaking we were not able to procure more specimens.

Iris red, and also the naked space round the eye, bill blackish, point pale horn-color, feet gray.

Columba iriditorques.

Columba iriditorques, Cass. Proc. Acad. Nat. Sc. Philad. 1856, p. 254; — Hartl. Orn. W. Afr. p. 267; — Schl. Mus. P.-B., Columbae, p. 69.

Turturoena iriditorques, Shelley, Ibis 1883, p. 291.

Hab. West Africa, from Liberia to the Gaboon; St. Thomas.

Two specimens obtained near Soforé Place.

There is nothing to add to Cassin's and Capt. Shelley's description of this interesting species, except the color of the iris, bill and feet. Both specimens were shot on the ground in a thicket of low bush. We never observed them in high forest.

Iris pale rose-color, bill blue at the base, with horny yellow point, feet flesh-color.

Turtur semitorquatus.

Columba semitorquata, Rüpp. Neue Wirbelth. Vög. 1835, p. 66, pl. 23.

Turtur erythrophrys, Swains. Birds W. Afr. II, p. 207 pl. 22; — Hartl. Orn. W. Afr. p. 195.

Turtur erythrophrys et *Levaillantii*, Schl. Mus. P.-B., Columbae, p. 121.

Turtur semitorquatus, F. & Hartl. Vög. O. Afr. p. 541; — Boc. Orn. d'Ang. p. 383; — Shelley, Ibis 1883, p. 303.

Hab. The whole African continent south of about 41° N. lat. (Shelley).

Collected in the Grand Cape Mount Country.

This species of *Turtur*, the only one obtained in Liberia, is plentiful wherever open country exists, especially in grass fields, intermixed with bosquets, on cultivated land, especially near the water-side. Its food consists generally of grass seeds. Its nest is built on trunks or branches in brushwood beside or even in swamps, about 4′ above the ground or the water. It consists, like all Dove's nests, of a few losely arranged twigs, just close enough to prevent the eggs from dropping through and, for the size of the bird, rather small. The eggs, two in number, are pure white and measure from 2,0, to 3,2 cm. in length and from 2,2 to 2,3 cm. in width. They were collected in December.

Iris brick-red, naked space round the eye and the feet carmineous, bill black.

Peristera puella.

Peristera puella, Schl. Bijdr. tot de Dierk. 1848, p. 17, pl. 5; — Hartl. Orn. W. Afr., pp. 198 & 275; — Cass. Proc. Ac. Nat. Sc. Philad. 1859, p. 143.

Chalcopelia puella, Shelley, Ibis 1883, p. 321.

Hab. West Africa, from Liberia to the Gaboon.

Collected at Bavia and Soforé Place.

This beautiful Dove, hitherto only recorded from the Gold Coast and the Gaboon is by no means common in Liberia, where it lives very quietly on the ground in dense brushwood. In the high forest it was never found. Two specimens only were collected. The male was caught in a

snare (Bavia), the female I shot near our Station at Soforé Place. No sexual difference can be observed.

Iris dark brown, bill dark horn-brown, tip flesh-color, feet carmineous.

Peristera afra.

Columba afra, Linn. Syst. Nat. 1766. I. p. 284.

Peristera (*Chalcopelia*) *afra*, Hartl. Orn. W. Afr. p. 197; — Schl. Mus. P.-B., Columbae, p. 144.

Chalcopelia afra (Bp.), Boc. Orn. d'Ang. p. 389; — Shelley, Ibis 1883, p. 323.

Hab. The whole of Africa south of about 17° N. lat.

Collected in the Grand Cape Mount Country.

One of the commonest birds in the coast region, where it is met with in grass plains, farms, at the waterside, but especially in the vicinity of the Negro settlements, where nearly the whole day their well-known »hoop, hoop" can be heared. They seem to live entirely upon grass seeds. Their nests are found in thickets and are built in the same way as those of *Turtur semitorquatus* but much neater and thicker than those of the latter. The two eggs are white with a yellowish hue and measure 2,2 cm. in length and 1,7 cm. in width. They were collected in December.

Iris dark brown, bill, with the exception of the yellow point, and feet red.

Peristera tympanistria.

Columba tympanistria, Temm. & Knip, Pig. I, p. 80, pl. 36.

Peristera (*Tympanistria*) *tympanistria*, Hartl. Orn. W. Afr. p. 197; — Schl. Mus. P.-B., Columbae, p. 143; — Boc. Orn. d'Ang., p. 393.

Tympanistria tympanistria, Shelley, Ibis 1883, p. 326.

Collected along the St. Paul's River and near the Fisherman Lake.

Although far from being a common bird in Liberia, this Dove was occasionally met with at most of our hunting stations. In its manners it differs somewhat from the other Ground Doves, as we found it several times sitting in high forest trees.

Iris brown, bill blackish, feet red.

Numida cristata.

Numida cristata, Pall. Spic. zool., p. 15, pl. 2; — Hartl. Orn. W. Afr. p. 199; — F. & Hartl. Vög. O. Afr. p. 572; — Boc. Orn. d'Ang. p. 399.

Hab. West Africa, from Sierra Leone to Benguella, Eastern Africa.

Collected at Bavia and Buluma.

Although a well-known bird throughout Liberia, the Crested Guinea Fowl is only obtained with difficulty, on account of its extreme shyness and ability in hiding itself, whenever it is occasionally met with. We have never seen it on open plains, but always killed it while watching for Antelopes and the like in brushwood or high forest. Now and then it is caught in snares, especially in narrow passages through dense brushwood.

Iris in adult specimens grayish brown, naked skin on head and neck cobalt-blue, except chin and throat, which are minium-red, bill horny yellow, blue at the base, feet brownish lead-color.

An immature specimen from Buluma has the head feathered, the plume not developed, and the iris dark brown.

Agelastes meleagrides.

Agelastes meleagrides (Temm.), Bonap. P. Z. S. 1849, p. 145; — Schl., Handl. Dierk. 1857, Vog. fig. 57; id. de Dierentuin, 1872, p. 220, with fig.

Agelastus meleagrides, Hartl. Orn. W. Afr. p. 200.

A male specimen, collected at Soforé Place.

As this specimen was bought from a Native who had trapped it in a bush-path, nothing can be recorded about the habits of this very interesting and exceedingly rare species. The man could only tell me how it was caught and that the bird was well-known amongst the Natives but very rare everywhere. This specimen was the only one we ever got, in spite of all our efforts to get more.

Iris brown, bill greenish horn-color, bluish at base; naked skin on head and neck pale rose-color, of lower neck blue, white feathers on lower neck, chest and interscapulary feathers white, with a rather violet hue; feet grayish olive.

Francolinus ahantensis.

Francolinus ahantensis, Temm. Bijdr. tot de Dierk. 1854, p. 49, pl. 14. — Hartl. Orn. W. Afr. p. 202.

Hab. Liberia and Gold Coast.

Collected at Buluma, near the Fisherman Lake.

This bird was purchased from a Native who caught it, as he said, in a trap, in high forest. I am tolerably sure that a Francolin, shot at in the forests near Soforé Place, but not obtained, belonged to this species. As I roused it inexpectedly from the ground near a huge Cotton-tree, I immediately sought for its nest and found in a cavity between two prominent roots a fresh egg which undoubtedly belonged to the bird in question.

This egg is reddish brown in color, slightly sprinkled with violet, and much paler towards the poles, and measures 4 cm. in length and 2,6 cm. in width.

The iris of the bird is brown, bill coral-red, culmen black, feet, toes and claws pale coral-red.

Francolinus Lathami.

Francolinus Lathami, Hartl. J. f. O. 1854, p. 210; id. Orn. W. Afr. p. 202; — Boc. Orn. d'Angola, p. 411.

Francolinus Peli, Temm. Bijdr. tot de Dierk. 1854, p. 50, pl. 15; — Schl. Handl. Dierk. 1857. Vog. fig. 58.

Hab. West Africa, from Sierra Leone to the Loango Coast.

Collected at Bavia and Soforé Place.

This Francolin is, like the former species, an inhabitant of the forest region, where it is found occasionally scratching, like fowls, the ground in search for insects. We have never found them in coveys together.

Iris brown, bill dark horn-color, feet orange-yellow.

Oedicnemus vermiculatus.

Oedicnemus vermiculatus, Cab., v. d. Decken's Reisen, III. p. 46, pl. 16; — F. & Hartl. Vög. O. Afr. p. 622; — Boc. Orn. d'Ang. p. 423.

Hab. West Africa, from Liberia to the Cunene River; Eastern Africa.

Two specimens (males) were collected; one near the Fisherman Lake, the other on a sand-bank before the mouth of the Marfa River, on the 18th of August.

This species is closely allied to *O. crepitans*, from which it may easily be distinguished by its much longer and stouter bill and the much larger shaft-streaks on the interscapulary feathers. The vermiculations on the back are very faintly marked in both our specimens, so that the powerfull bill would have formed a much better ground to base the name of the species upon. The specimen shot in March near Buluma has the general color of its upper parts rufous, the other, shot in August, is grayer, probably on account of its worn plumage, which has lost the fulvous edges to the feathers.

This species, the only one of the genus met with in Liberia, resorts especially to bare sandbanks, which are plentiful before the nearly united mouths of the Grand Cape Mount-, Marfa- and Sugary Rivers, and is only found along the Fisherman Lake during the dry season, when the water of this lake, sweet during the rains, be-

comes salt and is then populated for the most part by a sea- and brack-water-fauna. These birds, however stupid they at first seem to be, are very difficult to approach within gun-shot. They feed upon small crustaceous animals.

The measurements of these birds are as follows: Bill from front 5,4 cm., from gape 6,5, wing 20, tail 11, tarsus 8, middle toe 3,3.

Iris yellow, bill in live birds black, base of bill, eyebrows, legs and feet pale yellowish green.

Glareola megapoda.

Glareola megapoda, G. R. Gray, List Spec. Birds Br. Mus., III, p. 62 (1844).

Glareola megapodia, F. & Hartl. Vög. O. Afr. p. 636.

Glareola nuchalis liberiae, Schl. Notes Leyd. Mus. 1881, p. 58.

Hab. Liberia; Niger.

A large series collected on the St. Paul's River, the Fisherman Lake and the Marfa River.

This fine Pratincole is very closely allied to *G. nuchalis*, described by Gray, after a specimen from the upper Nile (P. Z. S. 1849, p. 63; Aves, pl. IX), but constantly distinguished by its r u f o u s instead of w h i t e collar. When obtaining the first specimen, I thought it to be a local race of *G. nuchalis* (*G. megapoda* being unknown to me), and Prof. Schlegel, in his above cited note on the zoological researches in Liberia, mentions it as *G. nuchalis liberiae*. While preparing this paper, I fancied my bird might be *G. megapoda*, the type of which »an immature bird in rather bad condition" is still preserved in the British Museum, and which is believed to be distinct from *G. nuchalis* by Drs. Finsch and Hartlaub, l. c. Having, however, neither a specimen of *G. megapoda* nor of *G. nuchalis* at my disposal, I wrote to Mr. Sharpe about the matter, who kindly answered me as follows: »The type of *G. nuchalis* is in the Museum still. It is like the plate,

with the exception that the white on the wing-coverts does not exist. It is really caused by the white bases to the primaries! The young bird from the Niger is certainly an immature *G. megapoda*, which has a rufous collar, when adult." It is upon this authority that I apply the name of *Glareola megapoda* to my Liberian Pratincoles. As this species seems to have never been described — the above cited list containing merely the name — I add here a plain description of my adult specimens from Liberia.

Upper surface, chin, throat, sides of head, breast, sides of body and under wing-coverts brownish gray, slightly tinged with shining olive; abdomen ashy white, upper and under tail-coverts pure white, some of the longest of the latter, even in fully adult birds, more or less largely tipped with dark brown; quills dark brown, primaries with white bases to the inner webs in the males, without any white in the females, basal half of the inner web of the secondaries in both sexes white, also the tips of the innermost under wing-coverts. An adult female, the ovary of which contained fully developed eggs, has the gray feathers on the edge of the wing mixed with a few pure white ones. The slightly furcated tail is dark brown, glossed with green, the innermost pairs occasionally tipped with white; a large basal space of the tail-feathers white, which color gradually increases in extent towards the outermost pair, which is, except the tip and a narrow strip on the edge of the outer web, entirely white. Lores black, a broad collar round the nape rufous, continued, on each side, by a white stripe, which runs above the ear-coverts till behind the eye and from there below the eye to the gape.

Iris dark brown, bill coral-red, point black, feet coral-red.

No difference between male and female, except the above mentioned one. Wing 13,7—14,4 cm.; tail: outermost pair 5,7, innermost 4,5; tarsus 1,8, middle toe 1,4, bill (culmen) 1.

While staying at Bavia, we found a great number of these birds inhabiting the numerous bare, rocky islands

and sand-banks in the St. Paul's River, opposite to our hunting station. They were never seen on the banks of the large river, but very much, especially in the morning and evening, in company with *Waldenia nigrita*, on the wing above the water, hunting after insects. Except a few beetles, we never found anything in their stomachs. When alarmed, they assumed a very ungraceful, erect attitude. It was hard to get within gun-shot of them and, as we had to shoot at them from a small canoe, they were not easily obtained.

On my last visit to the islands, the 15th of March, I found their nests, if this expression may be used, one of them with two, the others with one egg each. In fact, the nests were nothing but a somewhat cup-like hole, scratched in the hot sand near a piece of rock, without any lining. Unfortunately we lost our canoe the evening of the same day, and as the river was rising very rapidly on account of the heavy rains, we could not reach the islands swimming in search of the eggs, as we otherwise should have done.

The eggs are dull grayish green and thickly covered with irregular earthy brown spots. Length 2,8 cm., width 2,1.

Some few specimens of this bird were found on an inaccessible rock between two rapids near Soforé Place.

Vanellus inornatus.

Vanellus inornatus, Swains. Birds W. Afr. II, p. 239; — Hartl. Orn. W. Afr., p. 212; — Schl. Mus. P.-B., Cursores, p. 63.

Chettusia inornata, Rchw. Journ. f. Orn. 1874, p. 381; — Boc. Orn. d'Angola, p. 425.

Hab. West Africa, from the Gambia to the Congo.

Collected at Buluma, where during the months of December and January it regularly visited newly made farms, in small flocks of 5 to 7 specimens. Their habits are exactly like those of *Vanellus cristatus*; when disturbed, they fly up

with great noise and will never come down to the same spot again.

Iris orange-yellow, bill black, feet reddish brown.

Lobivanellus albiceps.

Vanellus albiceps, Gould, P. Z. S. 1834, p. 45.

Sarciophorus albiceps, Fras. Zool. typ. pl. 64; — Boc. Orn. d'Ang. p. 428.

Lobivanellus albiceps, Hartl. Orn. W. Afr. p. 214; — Sharpe, Layard's Birds S. Afr. p. 667.

Hab. West Africa, from Liberia to the Congo; South East Africa, Zambesi.

Collected on the St. Paul's River near Soforé Place, and on a sand-bank below Cobolia, on the Marfa River.

It is very peculiar that these birds keep in small flocks to some well-known spots, either rocky islands or sand-banks in the rivers tolerably far back in the Interior, where the water runs very fast. On the St. Paul's there was only one spot where we ever saw them, and the same was the case with the bank mentioned in the Marfa River. The Natives told me that they stay there for years and are never seen on other similarly situated spots in the same river. They can, though very watchful, be shot tolerably easy as they fly regularly from one end of the bank or island to the other, uttering loud cries. On a trip up the Marfa River I shot, out of about 8 to 12 that inhabited the very long bank, three specimens from my canoe in passing by, without the rest feeling obliged to leave the bank. All three were adult males in full breeding plumage. I fancied that the females were breeding on the same bank, but there was, unfortunately, no time to stop and seek for them. A native war, that broke out shortly after that trip, prevented me from paying another visit to that part of the country. The small colony in the St. Paul's River inhabited a rocky island between two rapids and was inaccessible to us. Some specimens were shot on the wing,

but only one, a young male, could be obtained. The lobes of this specimen are very small, the gray color on the sides of the head and neck has a fulvous tinge, the color of the back and tertiaries is pale fulvous instead of grayish brown, feet yellow. These birds feed upon small Crustacea, Molluscs and Insects.

Iris pale yellow, bill and lobes orange-yellow, the point of the first black, feet pale grass-green.

Charadrius hiaticula.

Charadrius hiaticula, Linn. Syst. Nat. I. p. 253 (1766); — Schl. Mus. P.-B., Cursores, p. 26; — F. & Hartl. Vög. O. Afr. p. 657.

Aegialitis hiaticula, Boc. Orn. d'Angola, p. 431.

Hab. Europe, the whole of Africa, Asia, Australia.

Collected along the beach near Robertsport, and on the banks before the mouth of the Marfa River.

This bird seems to visit Liberia only in the winter and to arrive there in October. As in Europe, this bird is only found on bare sandy banks along rivers and the sea-shore.

Iris dark brown, bill orange-yellow, with black point, feet pale flesh-color.

Charadrius cantianus.

Charadrius cantianus, Lath. Ind. Orn. Suppl. p. 66 (1801); — Schl. Mus. P.-B., Cursores, p. 31.

Charadrius littoralis (Bechst. 1809), F. & Hartl. Vög. O. Afr. p. 652.

Hab. Europe, whole of Africa, Asia, America.

A young male in first autumn plumage, collected on the sea-shore near Robertsport, the 23rd of October.

Iris dark brown, bill black, feet blackish gray.

Ardea ardesiaca.

Ardea ardesiaca, Wagl. Syst. Av. Ard. sp. 20; — Hartl. Orn. W. Afr. p. 222; — Schl. Mus. P.-B., Ardeae, p. 10; — Boc. Orn. d'Ang. p. 440.

Ardea calceolata, Du Bus, Bull. Acad. Brux. IV. p. 39, pl. 3; — Hartl. l. c.

Ardea flavimana, Sund. Oefv. Akad. Förh. 1850, p. 111.

Hab. The whole of Africa below the Sahara; Madagascar.

This Heron was never found in flocks together, as was the case with *A. atricapilla*. It rather prefers to sit singly or in pairs in marshy, not too thickly wooded places along creeks and rivulets.

Iris chestnut, bill black, tarsi black, toes yellow, bare skin round the eye black.

Ardea alba.

Ardea alba, Linn. Syst. Nat. I. p. 239; — F. & Hartl. Vög. O. Afr. p. 683.

Ardea flavirostris et *melanorhyncha*, Hartl. Orn. W. Afr. pp. 220 & 221.

Ardea alba et *egretta*, Schl. Mus. P.-B., Ardeae, pp. 16 & 17.

Herodias alba, Boc. Orn. d'Ang. p. 442.

Hab. South of Europe and Asia; the whole of Africa, Australia, America.

Collected near the Fisherman Lake, where it is not seldom seen fishing in the shallow water or sitting on the clumps of Mangroves which partially cover the banks of the lake.

Iris and bill yellow, tip of maxilla blackish, feet black.

Ardea gularis.

Ardea gularis, Bosc, Actes Soc. d'hist. nat. Paris. I. p. 4, pl. 2; — Schl. Mus. P.-B., Ardeae, p. 23.

Ardea gularis et *schistacea*, Hartl. Orn. W. Afr. p. 221.

Hab. Northern half of Tropical Africa and Madagascar.

Collected along the Fisherman Lake.

This Heron is very common on the Mangrove-trees along the Fisherman Lake, where it fishes in the small back-waters, left by the retreating tide. Although we have observed and shot a great many young specimens, we never had the opportunity of seeing an entirely white one. Some of the younger specimens collected, however, have the white on the throat extended very far down the fore-neck, and not seldom a part of one wing is left white while the corresponding part of the other has already changed its color. All the younger specimens collected by us have the general color ashy-gray with a bluish hue, which changes into slaty gray in adult birds.

Iris sulphureous, bill brown, base of lower mandible whitish, feet dark brown, toes and connected part of tarsi sometimes yellow.

Ardea atricapilla.

Ardea atricapilla, Afz. Acta Stockh. 1804; — Hartl. Orn. W. Afr. p. 223; — Schl. Mus. P.-B., Ardeae, p. 42; — F. & Hartl. Vög. O. Afr. p. 701.

Butorides atricapillus, Boc. Orn. d'Angola, p. 446.

Hab. The whole of Africa below the Sahara.

Collected near Grand Cape Mount.

This Heron is very common throughout the Coast-region where Mangrove-swamps and brackwater are abundant. It forms little colonies of from eight to fifteen pairs together. Their nests, formed by a few loosely joined twigs without any lining in a fork of the Mangrove, about 8 feet above the mud, are so thin that the eggs easily can be seen from below, and are almost inaccessible on account of the want of solidity in the ground. These birds are very fond of climbing up and down the Mangrove-roots and twigs, and feed generally upon different kinds of crabs and molluscs which are left by the retreating tide, and especially upon

a very peculiar small fish, the »big-eye-bompy" (*Periophthalmus koelreuteri*).

In October the female lays generally two, more rarely three eggs of a uniform green color and a size of 3,5 cm. in length and 2,8 in width. The young birds are very strongly tinged with fulvous.

Iris of adult birds yellow, of young birds brown; bill black, base of lower mandible and naked space before the eye greenish-yellow, feet brown, hind part of the tarsi and soles of the toes ochraceous.

Botaurus Sturmii.

Ardea Sturmii, Wagl. Syst. Av. Ard. sp. 37; — Hartl. Orn. W. Afr. p. 224; — Schl. Mus. P.-B., Ardeae, p. 45.

Botaurus Sturmi, Boc. Orn. d'Ang. p. 447.

Hab. Tropical and Southern Africa.

Collected at Bendo, near the Fisherman Lake.

This species was only found along freshwater-pools and creeks in the high forest. It is a very quiet bird, that seems to be somewhat rare in the country.

Iris greenish yellow, bill lemon-yellow, point black, feet reddish brown.

Botaurus leucolophus.

Tigrisoma leucolophum, Jard. Ann. and Mag. Nat. Hist. XVII, p. 51; — Hartl. Orn. W. Afr. p. 225; — Boc. Orn. d'Ang. p. 448.

Ardea leucolopha, Schl. Mus. P.-B., Ardeae, p. 50.

Hab. West Africa, from Liberia to the Congo.

Collected at Buluma, near the Fisherman Lake.

A beautiful immature male (full-grown) was shot near a freshwater-creek amids the high forest. These birds make sometimes, especially at night, more rarely during the daytime, a tremendous noise, almost like our Bittern. The natives told me that it was produced by a gigantic

snake that had inhabited the swamp already for many years! I remember to have heard the same tones on our hunting-station near Soforé Place, where I was informed that it was produced by »a huge old Alligator, calling for meat". As we never found Alligators in the St. Paul's as far up as Soforé Place, there is no doubt that this loud noise had the same origin as that near Buluma. It is very peculiar that the Boers of the Transvaal also believe the cry of the Bittern to be produced by a snake (see Sharpe, Layard's Birds of South Africa, p. 722 and 723).

The general color of our specimen, except on the crest, back, quills and tail-feathers is fulvous, broadly barred on the head, neck, scapulars and wing-coverts, with greenish black, which latter color prevails on forehead, hind neck and interscapulary feathers. The crest is as long as in adult specimens and, except a small brownish tip to some of the tolerably straight feathers, pure white. The quills are black, the primaries with a bluish, the secondaries with a greenish gloss, and all tipped with white. The first and second primary have, moreover, two large, the third and fourth only one small spot each on the inner web towards the tip, the tertiaries black, outer web banded across with fulvous. The back and upper tail-coverts are black, the first narrowly, the latter more broadly tipped with fulvous.

The tail-feathers are black, glossed with green and tipped and banded across with white. Chest, abdomen and under tail-coverts ochraceous with broad white shaft-streaks. Under wing-coverts black at base, white and faintly varied with fulvous towards the ends.

Iris sulphureous, bill greenish brown, paler towards the base, lower mandible and bare space round the eye yellowish, feet yellowish brown.

Nycticorax leuconotus.

Ardea leuconotus, Wagl. Syst. Av. sp. 33; — F. & Hartl. Vög. O. Afr, p. 713.

Ardea cucullata (Licht.), Schl. Mus. P.-B., Ardeae, p. 60.
Nycticorax cucullatus, Hartl. Orn. W. Afr. p. 225.
Nycticorax leuconotus, Boc. Orn. d'Ang. p. 450.
Hab. Tropical and Southern Africa.
Collected at Buluma, near the Fisherman Lake.

We found, though very rarely, this bird in the same places as *A. gularis* and *A. alba*, sitting on Mangrove-bushes.

Iris orange-red; bill black, feet lemon-yellow, claws horny.

Ciconia episcopus.

Ciconia episcopus, Bodd. Tabl. 906; — F. & Hartl. Vög. O. Afr. p. 722; — Boc. Orn. d'Ang. p. 452.
Ciconia leucocephala (Gm.), Hartl. Orn. W. Afr. p. 227; — Schl. Mus. P.-B., Ciconiae, p. 9.

Hab. Tropical and Southern Africa, with the exception of the Cape Colony; Southern Asia and Indo-Malay Archipelago.

Collected near Buluma.

The White-headed Stork seems to occur but sparingly throughout the country, as we saw it only now and then along the Fisherman Lake, wading in the shallow water along the shore, in pursuit of frogs, small fishes and crabs.

Iris cherry-red; bill red, black at base; feet grayish brown.

Ibis hagedash.

Tantalus hagedash, Lath. Ind. Orn. II. sp. 708, p. 23 (1790).
Ibis Hagedash (Vieill.), Schl. Mus. P.-B., Ibis, p. 10; — F. & Hartl. Vög. O. Afr. p. 735.
Geronticus hagedash, Hartl. Orn. W. Afr. p. 231; — Boc. Orn. d'Ang. p. 460.
Hab. Tropical and Southern Africa.

Collected near Buluma, which is the only place we met with it. The only specimen obtained was shot out of six

on a grassy plain, interspersed with some shallow pools.

Iris crimson, bill and bare skin of the face black, base of culmen crimson, feet blackish red.

Ibis olivacea.

Ibis olivaceus, Du Bus, Bull. Acad. Brux. 1837, p. 103.
Comatibis olivaceus, Hartl. Orn. W. Afr. p. 231.
Ibis olivacea, Rchw. J. f. O. 1874, p. 378.

Hab. West Africa, from Liberia to the Cameroons.

Collected at Bavia and Soforé Place, St. Paul's River.

Like the above mentioned species, this Ibis lives in small families together. They had a regular sleeping-place in very high trees about half a mile above our hunting station at Bavia, on the banks of the St. Paul's. Every evening, shortly after sunset, they came past our station from down the river, making a most horrible noise, consisting of long, training notes, something like »wah-wah, wah-wah."

Iris grayish brown, bill coral-red, bare skin of the face blackish blue, feet greenish flesh-color.

Numenius phaeopus.

Numenius phaeopus (L.), Hartl. Orn. W. Afr. p. 232; — Schl. Mus. P.-B., Scolopaces, p. 93.
Numenius haesitatus, Hartl. Orn. W. Afr. p. 233.

Hab. The most parts of the old world; whole of Africa.

Collected near the Fisherman Lake and the Marfa River.

Very common throughout the year on the banks of rivers and lakes, especially near the mouths of rivers, where large sand-banks are regularly formed. There is no difference at all between the summer- and winter-plumage.

Iris black, bill brown, lower mandible whitish at the base, feet lead-color.

Totanus canescens.

Scolopax canescens, Gm. Syst. Nat. I. p. 668.

Totanus glottis, Hartl. Orn. W. Afr. p. 235; — Schl. Mus. P.-B., Scolopaces, p. 61.

Totanus canescens, F. & Hartl. Vög. O. Afr. p. 745; — Boc. Orn. d'Ang. p. 464.

Hab. Most parts of the world; the whole of Africa.

Collected throughout the year (January, July, October and December) along the Fisherman Lake and the Marfa River. One of the commonest of Scolopacine birds in Liberia, and generally met with in pairs together.

Iris black, bill brown, feet grayish green.

Actitis hypoleucos.

Actitis hypoleucos (L.), Hartl. Orn. W. Afr. p. 235; — Schl. Mus. P.-B., Scolopaces, p. 80; — Boc. Orn. d'Ang. p. 468.

Hab. The same as in the preceding species.

Collected near Grand Cape Mount.

Observed throughout the whole year in the same places as the former species.

Tringa subarquata.

Tringa subarquata (Güldenst.), Hartl. Orn. W. Afr. p. 237; — Schl. Mus. P.-B., Scolopaces, p. 31; — Boc. Orn. d'Ang. p. 472.

Hab. Most parts of the world; the whole of Africa.

Collected at Grand Cape Mount.

Although there were no specimens observed during the summer months — the first one was obtained as early as the 30th of September — I feel sure that this species will be found there during the whole summer. The specimen mentioned quite agrees with the dress of the young

bird, as it is described by Finsch and Hartlaub (Vög. Ost-Afrikas, p. 763). It visits the same places as the above mentioned species, especially the banks of rivers and brackwater-lagunes.

Iris blackish brown, bill and feet blackish gray.

Himantornis haematopus.

Himantornis haematopus (Temm. in Mus. Lugd.), Hartl. Journ. f. Orn. 1855, p. 357; id. Orn. W. Afr. p. 242; — Schl. Handleid. Dierk. Vog. pl. 7, fig. 88; id. Mus. P.-B., Ralli, p. 28.

Hab. Liberia and Gold Coast.

Only one specimen collected at Bavia, St. Paul's River.

This specimen was caught in a snare, in a bush-path, not far from a swamp, and so I cannot tell anything about its habits. It is a beautiful adult male. The stomach was empty.

Iris brick-red; tip of bill horn-blue, with a tinge of rose-color; ridge of bill black, base of the lower and a spot on each side at the base of the upper mandible grass-green, naked skin between bill and eye bluish black, feet coral-red.

Ortygometra nigra.

Rallus niger, Gm. Syst. Nat. I. p. 717.

Limnocorax flavirostris (Swains.), Hartl. Orn. W. Afr. p. 244.

Porzana nigra, Schl. Mus. P.-B., Ralli, p. 34.

Ortygometra nigra, F. & Hartl. Vög. O. Afr. p. 779.

Limnocorax niger, Boc. Orn. d'Ang. p. 481; — Sharpe, Layard's Birds S. Afr. p. 618.

Hab. Tropical and Southern Africa.

Collected near Robertsport.

When staying at Robertsport, I had a fine opportunity to observe the habits of this peculiar Crake, in a freshwater-swamp at the foot of the mountain, directly

behind the sea-shore. Already in September I heared every night a noise almost like that of our Corn-Crake. My boys informed me that it was made by the »black Water-hen" in the above mentioned swamp, about a mile from my station. As this swamp was, on account of the rains, almost inaccessible, all my pains were in vain until the 22nd, when I happened to shoot my first adult specimen, after the water had fallen a little. These birds were always found in pairs, of which three were believed to live in this swamp. They were very shy and would scarcely allow themselves to be seen till after we had remained a good while motionless in a well-hidden spot. I never found them swimming, although in some places the water was very deep, but they always walked with a most graceful step and nodding head on the mud and, as much as possible, beside and through the high grass. They are not easily put up and fly very low above the water for a short distance. After having fallen in again, they run very fast to hide themselves in thickets of brushwood or inaccessible grassy islets. Towards the end of October the nocturnal sounds were heard no more and I supposed the birds would be breeding, but notwithstanding all the efforts I made with my boys we were not able to find a nest. On the 15th of November one of my boys brought in three live young ones, apparently just hatched. These birds could run tolerably fast already, and were entirely covered with black down.

Adult: Iris and eyebrows crimson, bill yellowish grass-green, feet coral-red.

Young: Iris brown; bill flesh-color, with a black cross-band before the nostrils, becoming broader on the lower mandible; feet brown.

Phoenicopterus spec.?

We have never met with Flamingos, but a friend of mine, Bishop Penick, an American Missionary at Roberts-

port whom I am obliged for many interesting objects of Natural History, has shot a straggling specimen near the Cape Mount River short before our arrival at Robertsport. This specimen was the only one that people recollected to have seen in that country. As Bishop Penick failed to preserve the specimen, I cannot say to which species it belonged.

Plectropterus gambensis.

Plectropterus gambensis (L.), Hartl. Orn. W. Afr. p. 246; — Schl. Mus. P.-B., Anseres, p. 93; — F. & Hartl. Vög. O. Afr. p. 802; — Boc. Orn. d'Ang. p. 491.

Hab. Western, Southern and Eastern Africa.

Collected near the Fisherman Lake (Buluma) and on the Marfa River.

I have never had the opportunity to observe the manners of this bird in the wild state. A nearly adult female was shot by Sala near Buluma during my absence. It has the head above and the neck grayish brown, a narrow ill-defined collar round the crop, at the base of the neck, the sides of the chest, axillaries, back and upper tail-coverts brown with a purplish gloss, primaries and secondaries black with a purplish gloss, tertiaries, larger wing-coverts and tail-feathers above beautiful steel-green, with a purplish gloss under a certain light. The head underneath and sides of head anterior to the ear-coverts, the throat, chest, breast, abdomen, sides of rump, under tail-coverts, under wing-coverts, lesser wing-coverts above and foremost feathers of the larger wing-coverts pure white.

Iris blue (Sala), bill at the point bluish white, membraneous part and bare skin in front of the head purplish, only the front until above the eyes being naked, legs and feet red.

About the middle of November of the same year (1881) my boys brought in alive nine specimens out of a brood

of eleven, caught in the Marfa River, about five miles off its mouth. As I was unable at that time to make any excursions, I could not try to get the parents of this brood, that was about three weeks old. Their heads were entirely covered with gray feathers, also the hind neck. Crown, chest, sides of the rump, outside of tibiae, axillaries, lower back and tail-feathers dark brown, edged with fulvous, the back, for a great part covered with down, ashy gray, tinged with fulvous, throat, sides of head and neck, lower breast, abdomen, vent and under tail-feathers silvery gray.

Iris gray; bill flesh-color, with the ridge brown; feet gray.

Sarcidiornis melanotos.

Anas melanotos, Penn. Zool. Ind. p. 21, pl. 11.

Sarcidiornis africana, Eyton, Monogr. Anat. p. 103; — Hartl. Orn. W. Afr. p. 246; — Boc. Orn. d'Ang. p, 496.

Anas melanota, Schl. Mus. P.-B., Anseres, p. 74.

Sarcidiornis melanotus, F. & Hartl. Vög. O. Afr. p. 799.

Hab. Indian Continent, Ceylon, Madagascar, Western and Eastern Africa.

This species was many times observed in two to five specimens together on the sand-banks before the mouth of the Sugary River, but we were never fortunate enough to approach within gun-shot.

When observed, they have a half erect, ungraceful attitude.

Dendrocygna viduata.

Dendrocygna viduata (L.), Hartl. Orn. W. Afr. p. 247; — Schl. Mus. P.-B., Anseres, p. 90; — Boc. Orn. d'Ang. p. 499.

Hab. Tropical parts of Africa and of America.

Collected near Robertsport.

All my specimens were collected on the sand-banks and islands before the mouths of the Grand Cape Mount-,

Marfa- and Sugary River. They are always found either in pairs or in small flocks of three or four pairs together, along the waterside, where the retreating tide has left behind masses of small Crustacea and Molluscs, upon which they principally feed. They are exceedingly watchful and generally fly off long before the huntsman has crept close enough to fire on them, so that to shoot this Duck always costs a large amount of time and patience. Although I had much opportunity of observing these Ducks, I never found them sitting on trees or even the Mangrove-clumps along the rivers. On the 9th of September 1881 I received an adult living specimen from a Native, who had caught it, as he said, on a nest with seven eggs, which latter unfortunately were eaten up by the man. Strange enough, this specimen, when dissected, proved to be a male! A few days afterwards I was brought to the nest, forming a kind of cup in dry grass under some shrubs, close to the mouth of the Grand Cape Mount River.

Seven young, covered with down, about a week old, were caught together in a grassy plain near the sea-coast, by my boys, the 16th of August. Iris brown, bill bluish, feet lead-color.

Adult: Iris dark grayish brown, bill black, with a bluish white cross-band behind the point, feet lead-color.

Sterna cantiaca.

Sterna cantiaca (Gm.), Hartl. Orn. W. Afr. p. 255; — Schl. Mus. P.-B., Sternae, p. 5; — Boc. Orn. d'Ang. p. 512.

Hab. Europe and the West Coast of Africa, till down to the Cape of Good Hope.

Collected on the beach near Robertsport.

One specimen shot from two, which I saw flying above the surf near Robertsport, on the 3rd of December.

Iris dark brown; bill black, with yellowish horn-colored tip; feet black.

Sterna fluviatilis.

Sterna fluviatilis (Naum.), Dresser, Birds of Europe, VIII. pl. 45.

Sterna senegalensis (Sw.), Hartl. Orn. W. Afr. p. 255.

Sterna hirundo, Schl. Mus. P.-B., Sternae, p. 17.

Sterna macroptera (Blas.), Boc. Orn. d'Ang. p. 510.

Hab. Europe, whole of Africa.

Collected, near Robertsport, Grand Cape Mount.

An adult male in full breeding-plumage was shot on the 26th of July, and four other ones, probably younger birds, on the 26th of April, the 26th of July, the 13th and 15th of August. During the whole summer large flocks of this Tern were seen near the bar-mouth, i. e. the united mouths of the Grand Cape Mount-, the Marfa- and the Sugary River. The younger specimens mentioned are white underneath and on the front. Upper tail-coverts gray like the back, lesser wing-coverts black, forming a black band along the edge of the wing. Iris brown, bill black, red near the base, feet red.

Iris of the adult bird brown, bill coral-red, with black point, utmost tip of both adult and young horny white, feet coral-red.

Hydrochelidon nigra.

Sterna nigra, Briss. Orn. VI. p. 211, pl. 20, fig. 1.

Hydrochelidon nigra, Hartl. Orn. W. Afr., p. 256; — Boc. Orn. d'Ang. p. 513.

Sterna fissipes et *nigra*, Schl. Mus. P.-B., Sternae, p. 29.

Hab. Europe; West Africa till down to the Cape of Good Hope.

Collected near Robertsport (Grand Cape Mount).

On the 15th of August I shot about 20 specimens out of a large flock, near the already mentioned bar-mouth. As they were all younger birds and wore a quite similar plumage — I do not remember to have seen birds in full

breeding plumage amongst the flock — I skinned but five specimens which are now all before me. The whole flock was sitting on a sand-bank at low water, rising like a cloud into the air after my first shot with great noise, and pouncing down upon their wounded comrades so that I was enabled to discharge shot after shot from my dancing canoe.

Iris dark brown, bill black, feet sooty brown.

Rhynchops flavirostris.

Rhynchops flavirostris, Vieill. Nouv. Dict. III. p. 358; — Schl. Mus. P.-B., Sternae, p. 40; — Boc. Orn. d'Ang. p. 515.

Rhynchops orientalis, Rüpp. Hartl. Orn. W. Afr. p. 257.

Hab. Western and Eastern Africa.

Collected near Robertsport.

I have seen the Scissor-bills during the summer of 1881 at the same places as the above mentioned Terns, but never higher up in the Interior. They were always found in pairs, which are easily killed, as one, as soon as the other has fallen by a shot and is left for a moment on the ground, flies round its fallen comrade until it is killed by another shot. A pair of adult birds in breeding plumage was shot on the 17th of August, another, semi-adult pair on the 26th of September. The bills of the latter were not yet fully developed, though exactly of the same shape as in the adult birds; they are coral-red with blackish tips. The upper parts are sooty brown as in the adult, but most of the feathers slightly tipped with whitish; underneath white, front and sides of head strongly tinged with brown. Iris black, feet coral-red.

Iris of adult birds dark brown, bill coral-red, point orange-yellow, feet coral-red.

Plotus Levaillantii.

Plotus Levaillantii, Licht. Cat. Doubl. Mus. Berol. p.

87; — Hartl. Orn. W. Afr. p. 258; — Schl. Mus. P.-B., Pelecani, p. 25; — Boc. Orn. d'Ang. p. 519.

Hab. Tropical and Southern Africa.

Collected on the Marfa River.

This species is found during the whole year perching on trees along rivers and creeks in the Grand Cape Mount Country, but not so common by far as the African Cormorant, which inhabits the same localities. They are found fishing near the water, sitting, if possible, on a projecting rock or an overhanging tree just above the surface of the water, with S-like drawn up neck. When wounded, they try to escape by diving and defend themselves, when harassed, by violent blows with their sharp-pointed bill.

Iris reddish brown, bill grayish green, feet red, strongly tinged with brown.

Graculus africanus.

Pelecanus africanus, Gm. Syst. Nat. I. p. 177.

Phalacrocorax africanus, Hartl. Orn. W. Afr. p. 259.

Graculus africanus, Schl. Mus. P.-B., Pelecani, p. 15; — Boc. Orn. d'Ang. p, 522.

Hab. Tropical and Southern Africa.

Collected during January and February near the Fisherman Lake.

Tolerably common along rivers and creeks, generally perching on not very high trees. Its habits and food (fishes) the same as in the preceding species.

Iris orange-red; bill yellowish flesh-color, with blackish point; feet black.

Leyden Museum, February 1885.

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10'
11°
50'
40'
30'
40°
30'
20'
10'
7°
6°
Halftown
Golah Country
Sofore Place
Bojeh
Guehpenneh
Sublum
Alin
Cobolia
Manna R.
Marfa Riv.
Vey Country
Browns Place
Little Cape Mount R.
Deh Ctry
Caba
Fali
Coro
Morfi R.
Sanwire
Sugary R.
Robertsport
Grand R.
Bendo
Buluma
Fisherman Lake
Jonny Creek
Gr. Cape Mt.
Travellers Rest
Bombo
Bavia
Rivers
Mühlenburg Mission
Rapids
St. Paul's
Stockton Creek
Old fields
Bassa Ctry
Messurado R.
Paynes ville
Junk R.
Roquelle R.
Cape Messurado
Monrovia
Schieffelins ville
Marshall
WESTERN
LIBERIA.
1:1.000.000.
Travelling routes.
11° W.f.Greenw.

H.Verlint, ad nat. del. et lith. P.W.M.Trap impr.

COLUMBA UNICINCTA *Cass.*